

## **BLAST MANAGEMENT AND EXPLOSIVES CONTROL PLAN**

Wallerawang Quarry

**FINAL**

August 2020



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Wallerawang Quarry

### **FINAL**

Prepared by  
**Umwelt (Australia) Pty Limited**  
on behalf of  
**Walker Quarries Pty Ltd**

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## Document Status

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	Name	Date	Name	Date
V0	Alex Irwin	22 February 2019	Alex Irwin	26 February 2019
V1	Alex Irwin	1 April 2019	Alex Irwin	1 April 2019
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# 1.0 Scope

The Wallerawang Quarry (the Quarry) is located approximately 8 kilometres (km) northwest of Lithgow (**Figure 1.1**) within Mining Lease (ML) 1633 and is operated in accordance with development consent DA 344-11-2001. ML 1633 covers an area of 44.33 hectares (ha) with extension of this to accommodate the approved disturbance footprint of the Quarry subject to an application for extension submitted to the NSW Division of Resources & Geoscience (DRG) of the Department of Planning, Industry & Environment (DPIE) made on 19 June 2019. DA 344-11-2001 was initially issued by the Minister for Infrastructure and Planning on 14 October 2004 and most recently modified on 26 February 2020.

DA 344-11-2001 approves disturbance up to a maximum of 28.6 ha for the purpose of quartzite and other hard rock extraction, processing, stockpiling, management and on-site disposal of non-saleable (overburden) materials, and ancillary infrastructure (**Figure 1.2**). The Quarry is approved to produce 500 000 tonnes per annum (tpa) of hard rock aggregate material and sand.

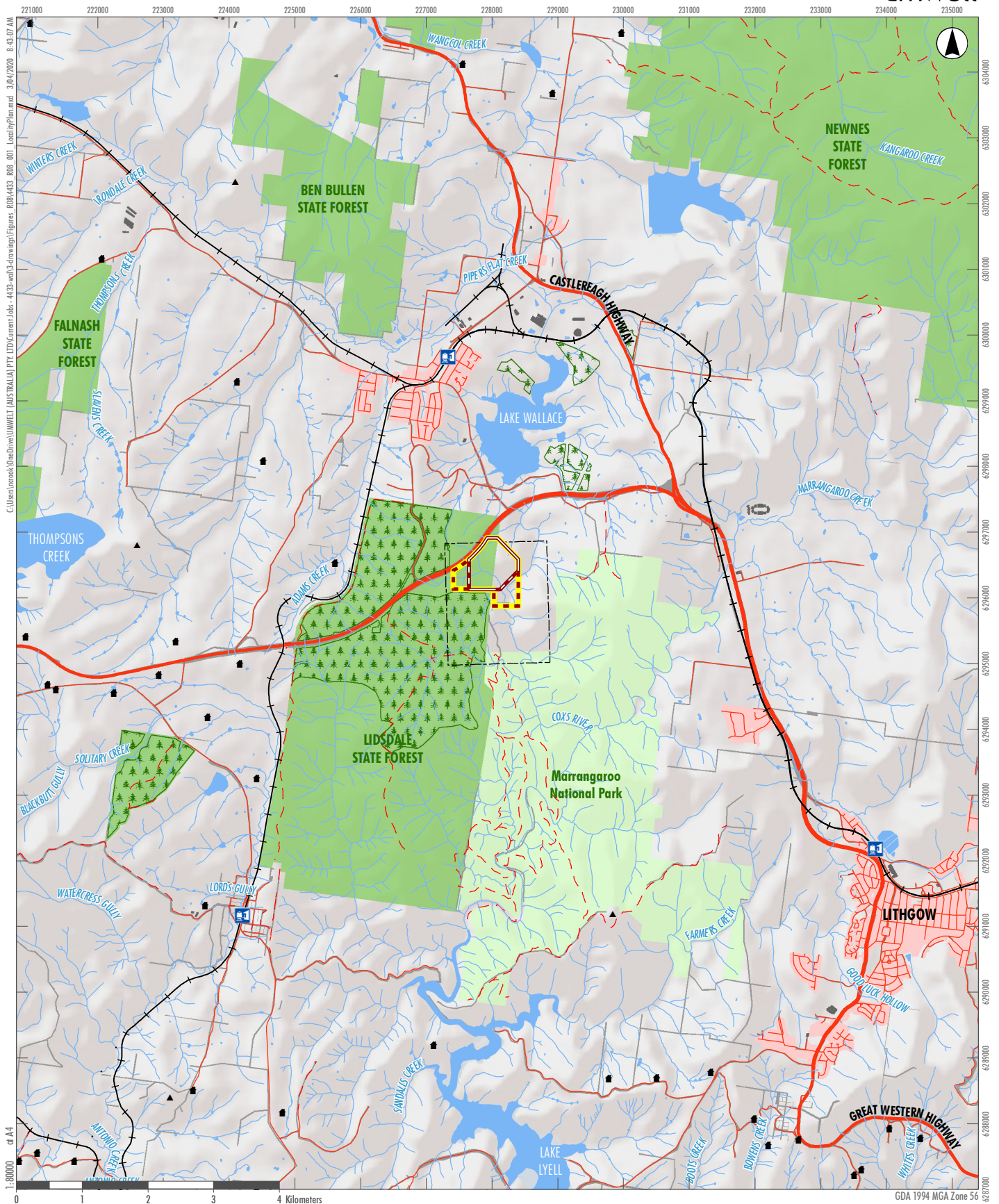
A Blast Management Plan was originally prepared and submitted by Sitegoal Pty Ltd to the then Department of Planning & Environment (DPE) (but not approved). Following an Independent Environmental Audit (IEA) completed in 2015, a Blast Management and Explosives Control Plan (BMECP) was prepared by RW Corkery & Co Pty Limited (RWC) and approved by the Secretary of the DPE in September 2016. The BMECP has been reviewed and updated a number of times since September 2016, most notably following Modifications 1 and 2 to DA 344-11-2001. This version of the BMECP (V2) has been reviewed and updated by Umwelt (Australia) Pty Ltd (Umwelt) on behalf of Walker Quarries Pty Ltd (Walker Quarries) following the approval of a modification (MOD 3) to DA 344-11-2001 on 26 February 2020.

**Table 1.1** provides the complete history of BMECP review and approval.

**Table 1.1 Document Status History**

Rev No.	Prepared by		Purpose
	Name	Date	
0	P. Hensley	October 2014	Draft submitted to department prior to commencement
1	RW Corkery & Co	September 2016	Updated and approved following first IEA
2	RW Corkery & Co	November 2017	Updated following Modification 1 (issued August 2017)
3	RW Corkery & Co	September 2018	Updated Following 2nd IEA
4	RW Corkery & Co	November 2018	Updated following 2018 Annual Review
V0	Alex Irwin	February 2019	Updated following Modification2 (issued December 2018)
V1	Alex Irwin	April 2019	Updated following DPE Review (March 2019)
V2	Alex Irwin	February 2020	Updated following Modification 3 (issued 26 February 2020)
V2.2	Alex Irwin	August 2020	Updated following DPIE Review of V2
V2.3	Alex Irwin	August 2020	Updated following DPIE Review of V2.2

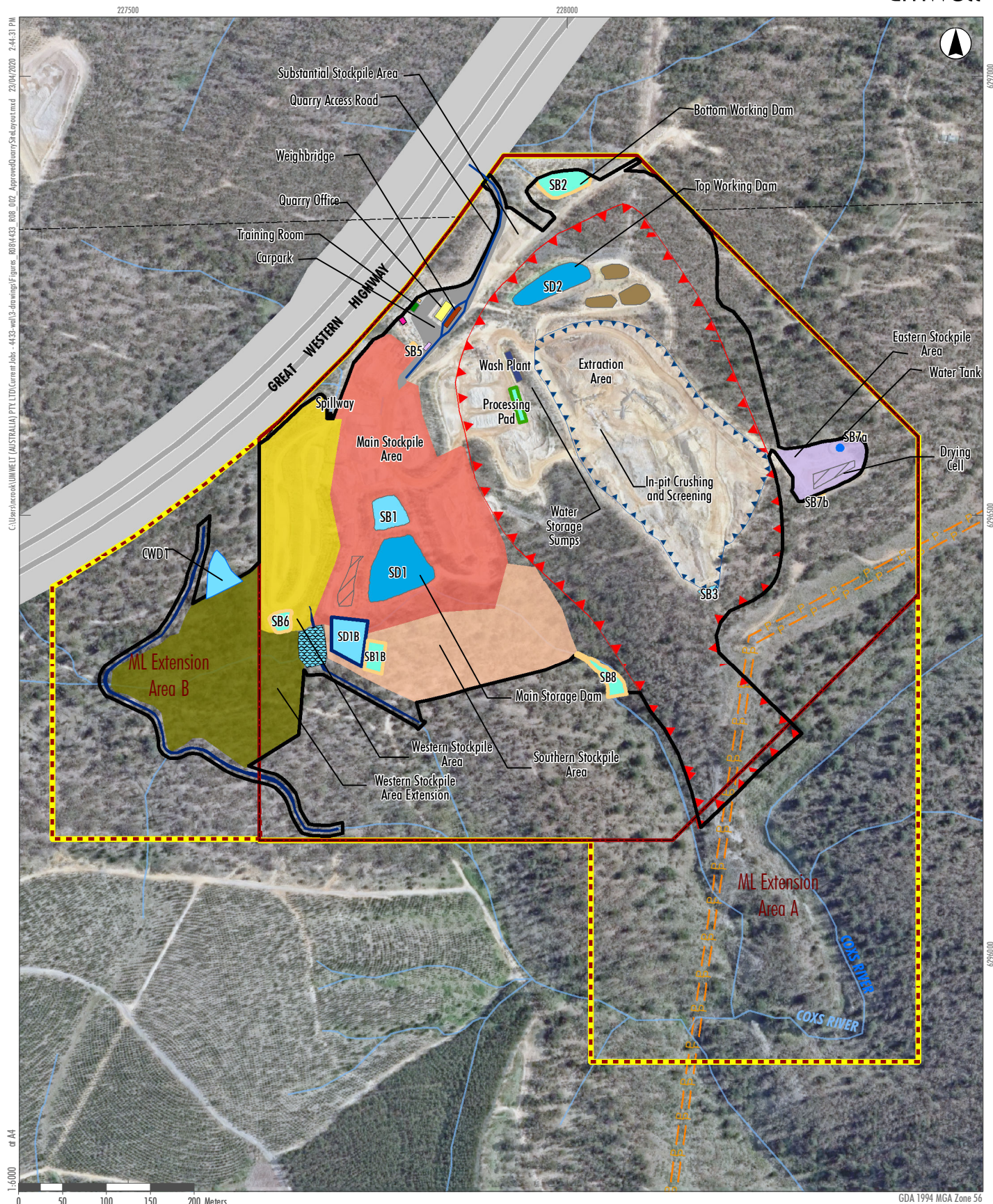




- Legend**
- Quarry Site Boundary
  - Quarry Site ML Extension
  - Quarry Site (ML1633)
  - EL 4473
  - State Forest
  - NPWS Estate

FIGURE 1.1  
Locality Plan





- Legend**
- Quarry Site Boundary
  - Quarry Site (ML1633)
  - Quarry Site ML Extension
  - EL 4473
  - Disturbed Areas for Modified Operations
  - Approved Extraction Area
  - Current Extent of Extraction Area
  - Main Stockpile Area (935m AHD)
  - Southern Stockpile Area (935m AHD)
  - Western Stockpile Area
  - Western Stockpile Extension (940m AHD)
  - Eastern Stockpile Area
  - Clean Water Diversion
  - Sediment Basins
  - Settlement Ponds
  - Storage Dam
  - Water Tank
  - Rubbed Lined Drain
  - Clean Water Dam
  - Silt Cells
  - Electricity Transmission Lines

FIGURE 1.2

Approved Quarry Site Layout



This version of the BMECP (V2) has been prepared following the approval of a modification to DA 344-11-2001 to extend the period of approved operations to 2040, extend the extraction and stockpiling areas on the Quarry site as well as demonstrate compliance with the relevant clauses of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

Potential blasting impacts include the following:

- Air blast overpressure affecting nearby residents.
- Excessive ground vibration resulting in structural damage to nearby residences or infrastructure.
- Dust impact on nearby residents.
- Fume impact on nearby residents.
- Fly rock received at nearby residences or public roads.

## 2.0 Legal and Other Regulatory Requirements

### 2.1 Development Consent DA 344-11-2001

Conditions 3(6) to 3(9) of DA 344-11-2001 (as modified on 26 February 2020) provide instructions as to the requirements of Walker Quarries in relation to blasting and vibration management. Condition 3(10) requires the preparation of a *Blast Management Plan*. Conditions 5(3) to 5(5) provide instruction on the preparation, review and amendment to consent required management plans.

**Table 2.1** identifies each of these conditional requirements relating to blasting and vibration management and identifies the section of this BMECP where each is addressed.

**Table 2.1 Blast-Related Conditional Requirements of DA 344-11-2001**

No.	Condition	Section															
3(1)	<p><b>Hours of Operation</b></p> <p>The Applicant must comply with the operating hours set out in Table 1.</p> <p><i>Table 1: Operating Hours</i></p> <table><tr><th>Activity</th><th>Permissible Hours</th></tr><tr><td>Quarrying operations</td><td><ul style="list-style-type: none"><li>7 am to 6 pm Monday to Friday</li><li>8 am to 1 pm Saturday</li><li>At no time on Sundays or public holidays</li></ul></td></tr><tr><td>Loading and dispatch of trucks</td><td><ul style="list-style-type: none"><li>May be conducted at any time, provided these activities comply with the noise criteria in Table 2</li></ul></td></tr><tr><td>Blasting</td><td><ul style="list-style-type: none"><li>9 am to 5 pm Monday to Friday</li><li>9 am to 1 pm on Saturdays</li><li>At no time on Sundays or public holidays</li></ul></td></tr><tr><td>Maintenance</td><td><ul style="list-style-type: none"><li>May be conducted at any time, provided that these activities are not audible at any privately-owned residence</li></ul></td></tr></table>	Activity	Permissible Hours	Quarrying operations	<ul style="list-style-type: none"><li>7 am to 6 pm Monday to Friday</li><li>8 am to 1 pm Saturday</li><li>At no time on Sundays or public holidays</li></ul>	Loading and dispatch of trucks	<ul style="list-style-type: none"><li>May be conducted at any time, provided these activities comply with the noise criteria in Table 2</li></ul>	Blasting	<ul style="list-style-type: none"><li>9 am to 5 pm Monday to Friday</li><li>9 am to 1 pm on Saturdays</li><li>At no time on Sundays or public holidays</li></ul>	Maintenance	<ul style="list-style-type: none"><li>May be conducted at any time, provided that these activities are not audible at any privately-owned residence</li></ul>	4.2.1					
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3(6)	<p><b>Airblast Overpressure Limits</b></p> <p>The Applicant must ensure that blasting on site does not cause any exceedance of the criteria in Table 3.</p> <p><i>Table 3: Blasting Criteria</i></p> <table><tr><th>Receiver</th><th>Airblast overpressure (dB(Lin Peak))</th><th>Ground vibration (mm/s)</th><th>Allowable exceedance</th></tr><tr><td rowspan="2">Any residence on privately-owned land</td><td>120</td><td>10</td><td>0%</td></tr><tr><td>115</td><td>5</td><td>5% of the total number of blasts over a period of 12 months</td></tr><tr><td>All public infrastructure</td><td>-</td><td>50</td><td>0%</td></tr></table> <p>However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner or infrastructure owner to exceed the limits in Table 3, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	Receiver	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	Any residence on privately-owned land	120	10	0%	115	5	5% of the total number of blasts over a period of 12 months	All public infrastructure	-	50	0%	4 & 5
Receiver	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance														
Any residence on privately-owned land	120	10	0%														
	115	5	5% of the total number of blasts over a period of 12 months														
All public infrastructure	-	50	0%														
3(7)	<p><b>Property Inspections</b></p> <p>If the Applicant receives a written request from the owner of any privately-owned land within 2 km of the site for a property inspection to establish the baseline condition of any buildings and structures on their land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:</p> <ul style="list-style-type: none"><li>establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and</li><li>identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures; and</li></ul>	<p>6.1.1</p> <p>6.1.2</p>															

No.	Condition	Section
3(8)	(b) give the landowner a copy of the new or updated property inspection report.	6.1.2
	If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.	6.2.2
	<b>Property Investigations</b> If the owner of any privately-owned land within 2 km of the site or any other landowner where the Secretary is satisfied an investigation is warranted, or claims in writing that buildings or structures on their land have been damaged as a result of blasting on the site, then within 2 months of receiving this written claim the Applicant must:	6.2.1
	(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and (b) give the landowner a copy of the property investigation report.  If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Secretary.  If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.	6.2.2.3  6.2.2.3  8
3(9)	<b>Operating Conditions</b> During blasting operations, the Applicant must: (a) implement best practice management to: <ul style="list-style-type: none"> <li>protect the safety of people and livestock;</li> <li>protect public or private infrastructure and property from damage; and</li> <li>minimise the dust and fume emissions;</li> </ul> (b) operate a suitable system to enable the local community to get up-to-date information on the proposed blasting schedule on site; and (c) carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent, to the satisfaction of the Secretary.	6.1.3, 6.1.4, 6.1.5, 6.1.4, 6.1.5 6.1.4, 6.1.6, 6.1.7 6.1.1 6.1.10
3(10)	<b>Blast Management Plan</b> The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval within three months of the determination of Modification 1, unless otherwise agreed by the Secretary; (b) describe the measures to be implemented to ensure compliance with the blast criteria and operating conditions of this consent; (c) include measures to manage fly rock to ensure the safety of people and livestock and to protect properties; (d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria in this consent; (e) include local community notification procedures for the blasting schedule, in particular to nearby residences; and (f) include a protocol for investigating and responding to complaints related to blasting operations.	Noted  6  6.1.5. 6.1.10, 7  6.1.1 6.2.2.1



No.	Condition	Section
	The Applicant must implement the Blast Management Plan as approved from time to time by the Secretary.	Noted
5(3)	<p><b>Management Plan Requirements</b></p> <p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <ul style="list-style-type: none"> <li>(a) a summary of relevant background or baseline data;</li> <li>(b) details of: <ul style="list-style-type: none"> <li>• the relevant statutory requirements (including any relevant approval, licence or lease conditions);</li> <li>• any relevant limits or performance measures and criteria; and</li> <li>• the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</li> </ul> </li> <li>(c) any relevant commitments or recommendations identified in the document's listed in condition 2(c) of Schedule 2;</li> <li>(d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</li> <li>(e) a program to monitor and report on the: <ul style="list-style-type: none"> <li>• impacts and environmental performance of the development; and</li> <li>• effectiveness of the management measures set out pursuant to condition 2(c) of Schedule 2;</li> </ul> </li> <li>(f) contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</li> <li>(g) a program to investigate and implement ways to improve the environmental performance of the development over time;</li> <li>(h) a protocol for managing and reporting any: <ul style="list-style-type: none"> <li>• incident, non-compliance or exceedance of the impact assessment criteria or performance criteria;</li> <li>• complaint; or</li> <li>• failure to comply with statutory requirements;</li> </ul> </li> <li>(i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and</li> <li>(j) a protocol for periodic review of the plan.</li> </ul> <p>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</p>	<p>N/A</p> <p>2.0</p> <p>4.0</p> <p>6.2, 9.0</p> <p>6.0</p> <p>7.0</p> <p>6.2.2, 8.2</p> <p>9.1, 12</p> <p>12.0</p>
5(3A)	The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site.	3.0
5(4)	The Applicant must continue to apply existing approved management plans, strategies or monitoring programs that have most recently been approved under this consent, until the approval of a similar plan, strategy or program under this consent.	13.0
5(5)	<p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> <li>(a) incident report under condition 9 below;</li> <li>(b) Annual Review under condition 11 below;</li> <li>(c) audit report under condition 14 below; and</li> <li>(d) any modifications to this consent,</li> </ul> <p>the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. The applicant must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.</p>	Appendix 1

## 2.2 Environment Protection Licence 13172

Environment Protection Licence 13172 (EPL 13172) contains a number of conditional requirements relating to blasting.

**Table 2.2** identifies each of these conditional requirements and identifies the section of this BMECP where each is addressed.

**Table 2.2 Blast-Related Conditional Requirements of EPL 13172**

No.	Condition	Section
L5.1	The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	4.1
L5.2	The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	4.1
L5.3	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	4.1
L5.4	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5 mm/sec for more than five percent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	4.1
L5.5	Blasting in or on the premises must only be carried out between 9:00am and 5:00pm, Monday to Saturday <sup>1</sup> . Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.	4.2.1
M1.2	All records required to be kept by this licence must be: (a) in a legible form, or in a form that can readily be reduced to a legible form; (b) kept for at least 4 years after the monitoring or event to which they relate took place; and (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	8.1
M7.1	To determine compliance with condition(s) L5.1 to L5.4. (a) Air blast overpressure and ground vibration levels must be measured at the most affected residence or noise sensitive location that is not owned by the licensee or subject to a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative blasting level – for all blasts carried out in or on the premises; and (b) Instrumentation used to measure the air blast overpressure and ground vibration levels must meet requirements of Australian Standard 2187.2 of 2006.	6.2 6.3

Note 1: Condition 3(1) of DA 3444-11-2001 limits blasting to between 9am and 5pm Monday to Friday and 9am and 1pm on Saturdays.

## 2.3 Work Health and Safety (Mines and Petroleum Sites) Regulation 2014

Relevant clauses that relate to the explosives control plan from the *Schedule 2 Clause 4* of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* (WHS (MPS) Reg) are listed in **Table 2.3**.

**Table 2.3 Blast-Related Conditional Requirements of WHS (MPS) Reg – Schedule 2, Clause 4 Explosives Control Plan**

No.	Condition	Comment
1	<p>An explosives control plan must set out the control measures for risks to health and safety associated with explosives at the mine or petroleum site taking into account:</p> <ul style="list-style-type: none"> <li>(a) the potential for unintended or uncontrolled detonation of explosives</li> <li>(b) the characteristics of relevant explosives and the purposes for which they are to be used</li> <li>(c) the characteristics of the places in which the explosives are to be used</li> <li>(d) the full set of phases for the use of relevant explosives such as the charging and firing phases</li> <li>(e) the potential for explosives to deteriorate</li> <li>(f) the potential for the theft or misuse of explosives</li> <li>(g) the potential for the ejection of fly rock or other material as a result of the detonation of an explosive.</li> </ul>	<p>Walker Quarries do not store or handle explosives on site.</p> <p>An external licenced Contractor is used for all explosives handling.</p> <p>Walker Quarries is not registered under the <i>Explosives Act 2003</i>.</p> <p>An external licenced Contractor is used for all Blasting requirements on site.</p> <p>An external licenced Contractor is used for all aspects of the Drill and Blast operation for the Wallerawang Quarry. The external contractors Drill and Blast Safety Management System has been reviewed and accepted in accordance with CI 22 of the WHS (MPS) Reg.</p> <p>An external licenced Contractor is used for all aspects of the Drill and Blast operation for the Wallerawang Quarry. Refer to <b>Section 6.1.4</b>.</p> <p>An external licenced Contractor is used for all aspects of the Drill and Blast operation for the Wallerawang Quarry. No explosives are stored on site.</p> <p>An external licenced Contractor is used for all aspects of the Drill and Blast operation for the Wallerawang Quarry. No explosives are stored on site, the licenced Contractor has control of all aspects of the blasting operation.</p> <p>Refer to <b>Section 6.1.5</b>.</p>
2	<p>An explosives control plan must also set out the following:</p> <ul style="list-style-type: none"> <li>(a) the procedures for inspecting, reporting, isolating and disposing of deteriorated or damaged explosives,</li> </ul>	<p>Walker Quarries is not licenced under the <i>Explosives Act 2003</i> to use, handle or store explosives.</p> <p>An external licenced Contractor is used for all Blasting requirements on site and are only on site on an 'as needs' basis.</p>



No.	Condition	Comment
	(b) the procedures for finding, recovering and disposal of explosives that misfire	Walker Quarries is not licenced under the <i>Explosives Act 2003</i> to use, handle or store explosives.
	(c) the inspection, testing, reporting and maintenance procedures in relation to the equipment used at the mine or petroleum site for manufacturing, storing, transporting and delivering explosives	An external licenced Contractor is used for all Blasting requirements on site and are only on site on an 'as needs' basis.
	(d) the procedures and equipment used in storing and transporting explosives at the mine or petroleum site	The external contractors Drill and Blast Safety Management System has been reviewed and accepted in accordance with CI 22 of the WHS (MPS) Reg.
	(e) the procedures used for the accounting of explosives at the mine or petroleum site	
	(f) the arrangements for the keeping of a register identifying persons who are licenced under the <i>Explosives Act 2003</i> to transport, use, store or handle explosives at the mine or petroleum site	
	(g) the procedures for ensuring that any person transporting, using, storing or handling explosives at the mine or petroleum site has any licence necessary under the <i>Explosives Act 2003</i> ,	
	(h) the procedures in relation to consultation and co-operation to ensure that any transportation, use, storage or handling of explosives at the mine or petroleum site is conducted safely and in accordance with any conditions attached to the licence under which that transportation, use, storage or handling takes place.	

As noted **Table 2.3**, an external contractor is engaged to undertake used for all aspects of the drill and blast operation at the Quarry. In accordance with Clause 22 of the WHS (MPS) Reg,

*A contractor must not carry out mining operations or petroleum operations at a mine or petroleum site unless:*

*(a) the contractor:*

- (i) has prepared a contractor health and safety management plan in accordance with subclause (2) and has provided a copy of the plan to the operator of the mine or petroleum site, and*
- (ii) has obtained written notice from the operator that the operator has reviewed the plan and is of the opinion that the plan is consistent with the safety management system for the mine or petroleum site, and*
- (iii) has, so far as is reasonably practicable, implemented the plan, or*

*(b) the contractor:*

- (i) has reviewed the relevant parts of the safety management system for the mine or petroleum site, and*
- (ii) has given the operator of the mine or petroleum site written notice that the contractor has conducted the review and is of the opinion that the safety management system is consistent with the contractor's arrangements to manage the risks to health and safety from mining operations or petroleum operations carried out by the contractor at the mine or petroleum site in accordance with clause 9 and any other requirements under the WHS laws that relate to those operations.*

*Note. Adopting the safety management system for the mine or petroleum site does not reduce the contractor's duty under section 19 of the WHS Act*

Walker Quarries has reviewed the Drill and Blast Safety Management System of the appointed drill and blast contractor and provided written acceptance of this to the contractor (refer to **Appendix 1**).

## 3.0 Objectives and Outcomes

**Table 3.1** presents the objectives and key performance outcomes relating to blasting management for the BMECP and the Quarry.

**Table 3.1 Blast Management Objectives and Key Performance Outcomes**

Objectives	Key Performance Outcomes
To ensure compliance with the conditions of DA 344-11-2001 and EPL 13172 and reasonable community expectations.	Compliance with all relevant criteria and reasonable community expectations.
To implement appropriate blast management and mitigation measures during all stages of Quarry operation.	All identified blast management and mitigation measures implemented.
To implement an appropriate blast monitoring program to establish compliance or otherwise with relevant criteria during all stages of Quarry operation.	All identified monitoring undertaken in accordance with the relevant procedures and at the relevant intervals.
To implement an appropriate complaints handling and response protocol.	Complaints (if any) handled and responded to in an appropriate manner. All complaints recorded and reported in accordance with annual reporting requirements.
To implement appropriate corrective and preventative actions, if required.	Corrective and preventative actions implemented, if required.
To implement an appropriate incident reporting program, if required.	Incidents (if any) reported in an appropriate manner.

## 4.0 Blasting Criteria and Limits

### 4.1 Blasting Criteria

In accordance with *Condition 3(6)* of DA 344-11-2001 and *Condition L4.1* of EPL 13172, the criteria for all on-site blasting activities are presented in **Table 4.1**.

**Table 4.1 Blasting Criteria**

Location	Air Blast Overpressure (dB(Lin Peak)) <sup>1</sup>	Ground Vibration (mm/s)	Allowable Exceedance
Any residence on privately-owned land or noise-sensitive building (i.e. a school or hospital)	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50	0%

<sup>1</sup> The airblast overpressure values apply when the measurements are performed with equipment having a lower cut-off frequency of 2 Hz or less. If the instrumentation has a higher cut-off frequency a correction of 5 dB should be added to the measured value. Equipment with a lower cut-off frequency exceeding 10 Hz should not be used.

### 4.2 Other Limits

#### 4.2.1 Blasting Hours of Operation

In accordance with *Condition 3(1)* of DA 344-11-2001 operational hours for blasting will be limited to 9:00am to 5:00pm Monday to Friday and 9:00am to 1:00pm on Saturday. It is noted blasting is unlikely on Saturdays and no blasting will occur on Sundays or public holidays.

Blasting outside these hours will only be undertaken in the event of a misfire or where blasting is required to ensure the safety of the Quarry or Quarry personnel and visitors.

#### 4.2.2 Blasting Frequency

Blasting frequency will be dependent on production, increasing from once (approximately) every 2 months for production up to 150 000 tpa, to once every two weeks at maximum production (500 000 tpa). Blasting will not be undertaken more than once on any day or on consecutive days (unless required following a misfire or for safety reasons).



## 5.0 Local Services, Infrastructure and Sensitive Receptors

**Figure 5.1** identifies the locations of sensitive infrastructure and receptors, along with the closest distance to blasting activities.

- The Great Western Highway (easement).
- Essential Energy power lines.
- High-pressure gas pipeline (part of the Central West Pipeline of APA Group).
- Lake Wallace dam wall.
- Registered Aboriginal site.

It is noted the closest telecommunications cables are located to the north of the Great Western Highway.

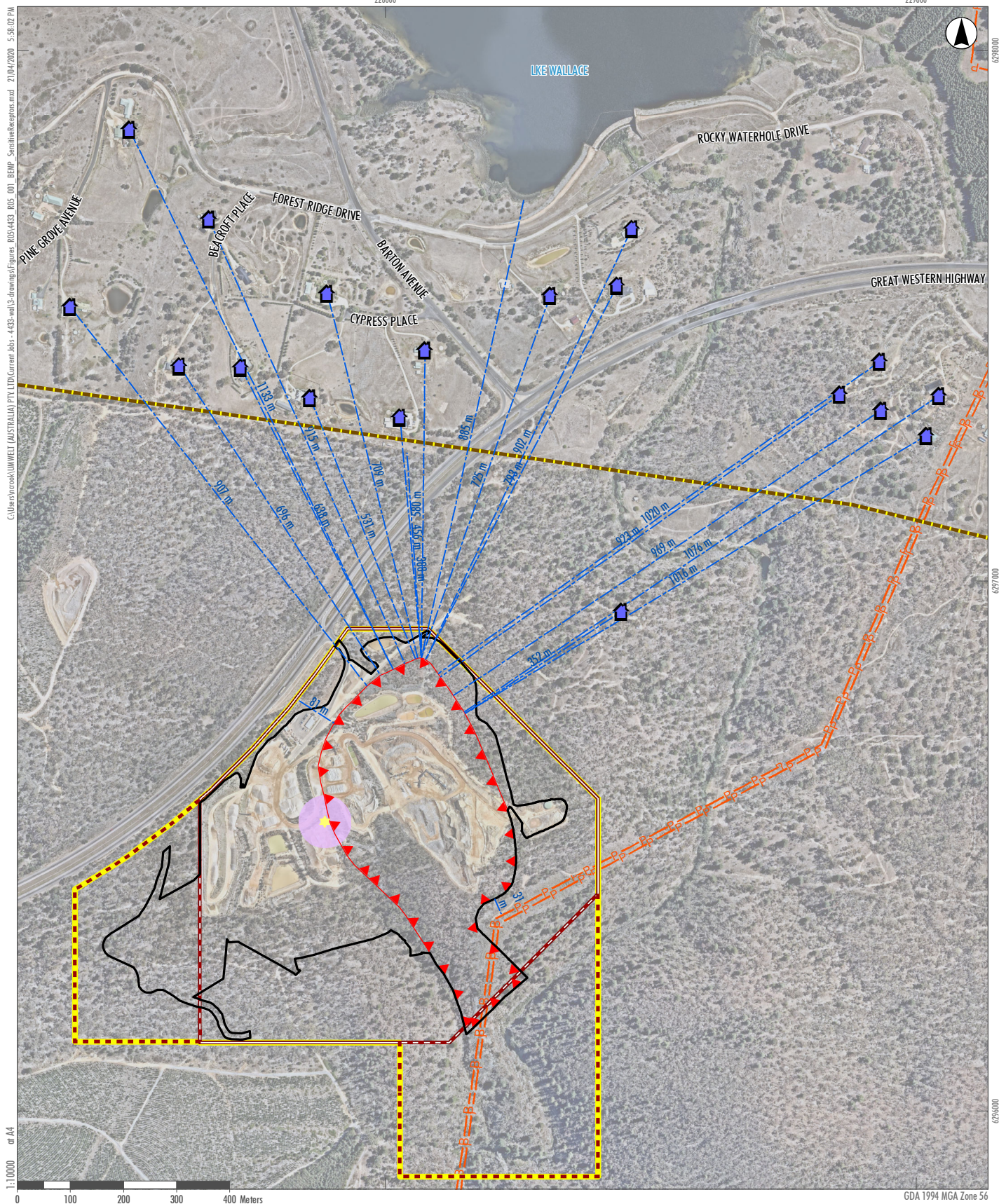
Blasting will not be undertaken within 30 m of the identified power lines and 100 m of any communications or other linear infrastructure.

Blasting will remain greater than 150 m from the Great Western Highway. Specific blast controls will be implemented for blasts between 150 m and 300 m from the Great Western Highway to ensure fly rock from blasting does not reach the road surface (refer to **Section 6.1.5**).

**Section 6.1.8** nominated specific management for the Aboriginal site when blasting is undertaken within 50 m (noting that the artefacts contained within this site have been approved for salvage which is to be completed in accordance with the Quarry Aboriginal Cultural Heritage Management Plan).

Blast monitoring is also undertaken to confirm vibration remains below critical criteria at the Lake Wallace dam wall (**Section 7.0**).





# Legend

- Quarry Site Boundary
- Quarry Site (ML1633)
- Quarry Site ML Extension
- Quarry Site - ML1633
- ▲ Approved Extraction Area
- Disturbed Areas for Modified Operations
- Residence
- ★ Aboriginal Site
- Distance to Approve Extraction
- 50m Buffer from Aboriginal Site
- P Power Line
- APA Gas Pipeline
- Cadastral Boundary

FIGURE 5.1

Sensitive Receptors



## 6.0 Blast Management System

### 6.1 Proactive Management

#### 6.1.1 Blasting Schedule Notification

In July 2014, in accordance with now superseded *Condition 2.15* of DA 344-11-2001, Calare Civil Pty Ltd (on behalf of Walker Quarries) provided written notification to 52 property owners within 2 km of the Quarry Site of:

- the proposed blasting timetable and duration
- the procedure available to residents for reporting possible blasting related damage to a residence or other vibration infrastructure (such as water supply or underground irrigation mains)
- the entitlement of any landowner within 2 km of the proposed blasting activities, to an investigation of the damage claims.

Walker Quarries will complete an annual review of landowners within 2 km of the Quarry Site, by 30 September each year, and where land ownership has changed, Walker Quarries will provide advice to the landowner of their entitlement to establish the condition of any buildings and structures on their land, or to have a previous property inspection updated. The initial review of land ownership will compare this to the property owners notified in July 2014.

At least every three years, commencing in 2021, Walker Quarries will provide correspondence to all landowners within 2 km of the Quarry Site (**Figure 1.1**) of their entitlement to:

- have a property inspection completed (or updated),
- receive notification of blasts.

Where individual landowners register an interest in being notified about the blasting schedule at the Quarry, Walker Quarries will provide:

- an email notification the day prior to the blast event, nominating the planned blast date and time
- a telephone call (if requested) during the morning of the blast to confirm the blast will proceed at the nominated (or varied) time.

A blast notification board, detailing the date and time of the next blast is maintained at the Quarry entrance on the Great Western Highway and will be updated at least 24 hours before each blast.

#### 6.1.2 Pre-blast Property Inspections

In accordance with *Condition 3(7)* of DA 344-11-2001, on written request from a resident of a property within 2 km of the Quarry Site, Walker Quarries will commission a *“suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:*

- *establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and*



- *identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures; person to undertake an inspection of structures potentially affected by blasting.”*

A copy of the inspection results will be provided to the property owner within 14 days of the inspection. Walker Quarries will retain a copy of the inspection report for reference for future blasting activities.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or disagreement over the findings of the property inspection report, either party may refer the matter to the Secretary of DPIE for resolution. The Secretary who may refer the matter to an Independent Dispute Resolution Process (**Section 6.2.2.2**).

To date, 26 properties have been inspected.

### 6.1.3 Meteorological Forecasting

Regional weather forecasts are available from the Bureau of Meteorology (BoM). These data will be reviewed by the Quarry Manager and/or blasting contractor who will check weather conditions for coming blast events and plan accordingly for adverse weather.

Adverse weather in terms of blasting impacts relates to:

- winds in the direction of the closest sensitive receivers, i.e. from the south to southeast quadrants,
- excessively wet conditions during which blast fumes may result, and/or
- conditions likely to be indicative of temperature inversion, i.e. fog or frost conditions.

The Quarry Manager will liaise with the blasting contractor at least 3 days prior to a planned blast event to review weather forecasts. Where it is determined the potential for high winds (from south/southeast), rainfall (>10 mm) or inversion conditions is high (>50%) the blast event will be postponed and rescheduled.

On the day of the planned blast, the Quarry Manager will again review weather conditions in consultation with the blasting contractor.

In the event that unfavourable meteorological conditions (as noted above) are identified, the shot-firer and Quarry Manager will determine whether it is safe to postpone the blast.

### 6.1.4 Blast Design and Review

Walker Quarries and blast contractors will implement a continuous improvement protocol for blasting through implementation of the following procedures:

- No blasting will be initiated within 30 m of any power line infrastructure, or within 100 m of any other public infrastructure or underground utilities (such as Telstra infrastructure) without the written permission of the agency responsible for managing that infrastructure.
- The drill and blast contractor is required to prepare and implement a *Drill and Blast Safety Management System* (**Appendix 1**).
- Blast energies are to be minimised as far as possible.
- Electronic detonators will not be used at the Quarry at any time.
- Quality control practices are to be implemented on the ground to ensure blasts are kept within design tolerances.

- High quality stemming products will be used.
- Adequate burden is to be maintained on all faces to prevent blowouts and blast anomalies.
- Each blast will be monitored to confirm compliance with air blast overpressure and ground vibration criteria.
- Following each blast, the area surrounding the blast location will be inspected and fly rock distribution to the front, rear and both sides of the blast site observed.
- Blast contractors, in conjunction with the Quarry Manager, will review blast monitoring records to enable continuous improvement and quality control, resulting in continual development of optimum blast parameters.

### **6.1.5 Fly Rock Management**

As part of the review process following exhibition and assessment of the original EIS for the Wallerawang Quarry, it was determined that closure of the Great Western Highway will not be required subject to the implementation of blast management measures designed to reduce the potential for fly rock.

For blasting undertaken within 150 m of the Great Western Highway:

- blast mats will be used.

For blasting between 150 and 300 m of the Great Western Highway:

- smaller blasts using packaged explosives (rather than bulk ANFO explosives) will be detonated
- blast holes will be drilled at an angle to ensure rock is thrown away from the Great Western Highway.

For blasting between 300 and 500 m of the Great Western Highway:

- bulk explosives (ANFO) will only be used after trials are completed to confirm fly rock can be controlled.

For all blasts:

- stemming will be measured to ensure the specified depth is achieved between the explosive and drill hole collar.

### **6.1.6 Dust Emissions**

The risk of excessive dust emissions from blasting are considered low given the geology of the rock (hard with low fines content) and small to moderate blast size (<30,000t).

The risk will be reduced further by ensuring that blasts are not undertaken under conditions likely to enhance the dispersion of dust, i.e. dry windy conditions. Weather forecast monitoring for excessive wind conditions and adverse wind direction (towards the Great Western Highway and Wallerawang) will be undertaken prior to each blast. If risk of elevated dust emissions is identified, blasting will be postponed to a time with favourable weather conditions.

### 6.1.7 Blast Fumes

The risk of fume generation from blasting at the Quarry is considered low, due to the low moisture content of the rock, and has not historically been an issue. The primary risk factors for fume generation identified in *Australian Explosives Industry and Safety Group (AEISG) Code of Good Practice: Prevention and Management of Blast Generated NOx Gases in Surface Blasting, Edition 2, 2011* ("the Code"), are identified below along with the measures to be implemented to reduce these risks.

#### Explosive Formulation and Quality Assurance

- Walker Quarries will employ the services of a licensed blasting contractor that operates under the NSW *Explosives Act 2003* and NSW *Explosives Regulations 2013*.
- Monitoring and calibration of the explosive manufacturing unit will be undertaken to ensure explosive mixing is in the correct proportions will be undertaken.

#### Geological Conditions

- Blasting will be restricted to confined and hard quartzite formations which presents reduced potential for seepage of explosives into cracks.
- These geological conditions are far less likely to result in energy dissipation through the rock (and incomplete explosion reaction) as weak, clayey and/or unconfined geology.

#### Groundwater

- Blasting will occur above the groundwater table limiting the potential for water to affect the explosives and detonation.

#### Blast design

- The depth of blast holes will be less than 20 m and therefore desensitisation of the explosive at depth is unlikely.
- Walker Quarries will employ an experienced blasting engineer to review conditions and design each blast.
- Walker Quarries will commence with conservative assumptions regarding conditions and blast performance.

#### Explosive product selection

- Packaged explosives and ANFO are appropriate explosives for dry holes in hard confined geology.
- Wet conditions will be avoided. If unavoidable, and complete dewatering of blast holes is not possible, emulsion based explosives will be used.

#### On bench practices/contamination of explosives

- Blast zones will be maintained free of loose rock and fine materials which could contaminate blast holes and affect explosion.
- Blast holes will be dewatered if subject to heavy rainfall.
- Inspections of blasts before initiation will ensure drilling has been completed as per design.
- Walker Quarries will minimise the time between drilling and charging of blast holes and avoid sleeping blasts to further reduce the potential for contamination.

Each blast will be monitored for evidence of fume (orange or red coloured dust). Should fume emissions be observed, Walker Quarries will implement a review and implement additional mitigation measures in accordance with the Code.

### 6.1.8 Aboriginal Site Protection

The Aboriginal site identified on **Figure 5.1** has been approved for disturbance with the artefacts to be salvaged and relocated in accordance with the Quarry Aboriginal Cultural Heritage Management Plan (OzArk, in prep<sup>1</sup>). It is expected salvage of artefacts will occur prior to blasting within 50 m of the site, however, should salvage be delayed for any reason and blasting occurs within 50 m of the Aboriginal archaeological site located within the Quarry Site, the site will be checked by the Quarry Manager and covered with straw bales (if required) to prevent any possible damage by fly rock. During these instances the Maximum Instantaneous Charge of the blast will not exceed 960 kg.

### 6.1.9 Blast Monitoring

A program of blast monitoring will be undertaken at nominated residences and the results and performance of the site operations discussed with local residents and landholders. Monitoring is further discussed in **Section 7.0**.

## 6.2 Reactive Management

### 6.2.1 Triggers

Three triggers for reactive management will be applied:

- Blast Complaint. Any complaint received, either directly or via Council, EPA or other regulatory agency, will trigger the implementation of the response and corrective action measures described in **Section 6.2.2.1**.
- Complaint involving structural damage or request for a property inspection (received in writing) by:
  - any owner of private land within 2 km of the Quarry Site,
  - any other landowner where the Secretary is satisfied an investigation is warranted, or
  - any landowner providing a claim in writing that buildings or structures on their land have been damaged as a result of blasting on the site.

Any request or complaint received in writing will trigger the response and corrective action measures described in **Section 6.2.2.2**. Should a verbal complaints or request be received, the person(s) will be asked to submit their request or complaint in writing.

- Exceedance of blasting criteria established through monitoring. Any record of blasting exceeding the criteria nominated in **Section 4.0** will trigger the response and corrective action measures described in **Section 6.2.2.3**.

<sup>1</sup> The Quarry Aboriginal Cultural Heritage Management Plan is currently being reviewed by the registered Aboriginal Parties of the Quarry with finalisation expected in 2020.

## 6.2.2 Response and Corrective Action

### 6.2.2.1 Blasting Complaint

A complaints handling procedure is provided in *Section 6.2.1* of the *Environmental Management Strategy*. Following receipt of a complaint, appropriate action will be taken within two working days to determine the cause of the complaint and identify appropriate actions to remediate the complaint source. The following details will be recorded following receipt of any blast-related complaint:

- The date and time of the complaint.
- The method by which the complaint was made.
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect.
- The nature of the complaint.

Within 48 hours of receipt of a complaint, action to identify the cause of the complaint and identify appropriate actions to remediate this will be commenced. On completion of actions to address the complaint, the following information will be added to the complaint register:

- The action taken in relation to the complaint, including any follow-up contact with the complainant.
- If no action was taken, the reasons why no action was taken.

All complaints will be investigated and an appropriate response provided to the complainant.

Should the complaint relate to structure damage to residences within 2 km of the Quarry, the measures described in the following subsection will be implemented. Should the complaint relate to required remediation of any other kind, Walker Quarries will negotiate the necessary actions with the complainant or initiate a dispute resolution procedure in accordance with *Section 6.2.1* of the *Environmental Management Strategy* for the Quarry.

### 6.2.2.2 Property Inspection

If a complaint involving structural damage to a building or a request for a property inspection is received as identified by the trigger of **Section 6.2.1**, Walker Quarries will commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim within 2 months of receiving this written claim. In the event of a dispute over the selection of the suitably qualified, experienced and independent person, then either party may refer the matter to the Secretary of the DPIE for resolution (as noted in **Section 6.1.2**).

The investigation will involve an inspection of the property and structures is consistent with the request for inspections prior to blasting commencing (**Section 6.1.2**). A copy of the inspection results to the property owner within 28 days of the inspection.



Should the property inspection identify structural damages to confirm the landowner's claim, Walker Quarries will pay for the cost to remediate the damages to the satisfaction of the Secretary of DPIE. Should there be disagreement with the findings of the independent property investigation, then either party may refer the matter to the Secretary of DPIE for resolution. The Secretary of DPIE may refer the matter to an Independent Dispute Resolution Process<sup>2</sup>.

### **6.2.2.3      Blasting Monitoring Exceedance**

If monitoring indicates that air blast overpressure or ground vibration exceeds criteria as a result of blasting, the following response and action plan will be implemented.

1. The incident notification process nominated in **Section 8.2** will be implemented.
2. The Quarry Manager (or delegated representative) will review the monitoring results, relevant ground and meteorological conditions and, in consultation with the blasting contractor, make arrangements to alter the blasting design, so that the air blast overpressure or ground vibration levels are reduced.
3. Within two weeks of obtaining any data showing an exceedance of blast criteria, the Quarry Manager will notify in writing any affected property owners or tenants and reiterate their rights to property inspection (refer to **Sections 6.1.1** and **6.1.2**).

Any exceedance of the approved blast criteria will be reported to EPA in the Annual Return and to DPIE in the Annual Review.

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<sup>2</sup> Further information on dispute resolution, including a procedural protocol are described in *Section 6.2.2* of the *Environmental Management Strategy* for the Quarry.

## 7.0 Monitoring

### 7.1 Meteorological Monitoring

**Figure 7.1** identifies the location of a meteorological station installed in accordance with *Condition 3(15)* of DA 344-11-2001 and *Condition M4.1* of EPL 13172. The meteorological station is located away from natural or artificial obstructions and areas with the potential to influence local thermodynamics, e.g. concrete or bitumen surfaces, generally in accordance with the *Approved Methods for Sampling of Air Pollutants in New South Wales*.

The parameters, units of measure, averaging period and frequency recorded by the meteorological station are specified in **Table 7.1** (and are in compliance with *Condition M4.1* of EPL 13172).

**Table 7.1 Meteorological Monitoring**

Parameter	Units of Measure	Frequency	Averaging Period
Rainfall	mm	Continuous	15 minute
Sigma theta	°	Continuous	15 minute
Air Temperature	°C	Continuous	1 hour
Wind Direction at 10m	°	Continuous	15 minute
Wind Speed at 10m	m/s	Continuous	15 minute

### 7.2 Blast Monitoring Locations

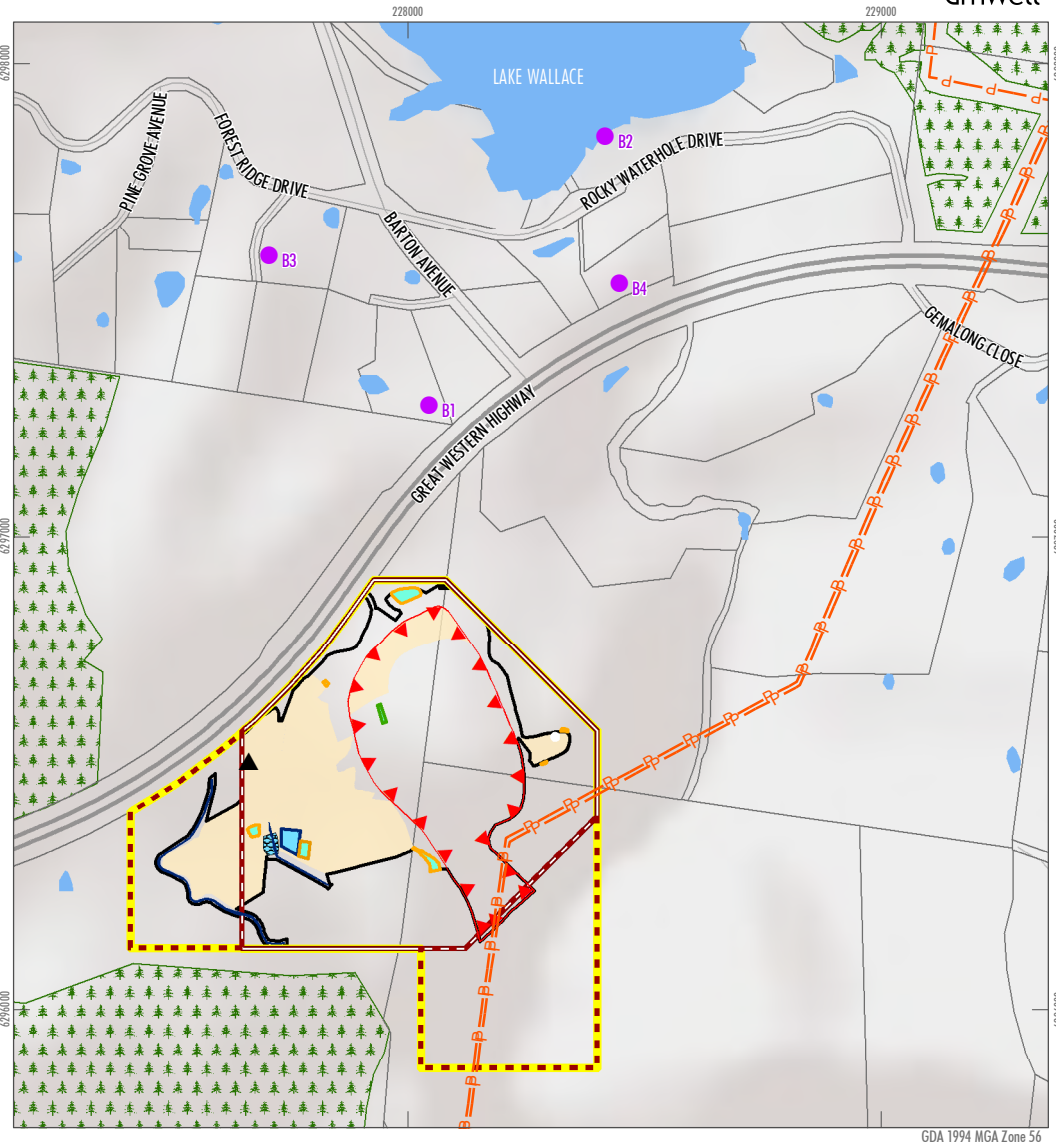
**Figure 7.1** displays the three indicative locations for blast monitoring. However, any property within a 2 km radius from the blast may be used to monitor blasting activity, subject to requests and permission from the landowner. At least three blast monitors will be used for each blast event.

One of the nominated monitoring locations is on the dam wall for Lake Wallace, the storage facility for the Wallerawang Power Station, and which is just within the 1,100m safety boundary zone (*Dams Safety Act 2015*) of the north-eastern end of the Quarry. This monitoring point utilises a steel plate attached to the concrete dam wall.



### Legend

- |   |                       |                        |
|---|-----------------------|------------------------|
| Quarry Site Boundary                    | Stockpile Areas       | Water Tank             |
| Quarry Site (ML1633)                    | Clean Water Diversion | Blast Monitor          |
| Quarry Site ML Extension                | Sediment Basins       | Meteorological Station |
| Disturbed Areas for Modified Operations | Settlement Ponds      |                        |
| Approved Extraction Area                | Storage Dam           |                        |
|   | Rubbled Lined Drain   |                        |



GDA 1994 MGA Zone 56

**FIGURE 7.1**  
**Blast Monitoring Locations**

## 7.3 Methodology

### 7.3.1 Equipment and Settings

A combination of Texcel  $\mu$ Mx and Texcel Compact Monitors or equivalent will be used to monitor air-blast overpressure (dB(L)) and peak particle velocity in a radial, vertical and transverse direction (mm/s), i.e. ground vibration. All monitoring equipment will meet requirements of Australian Standard 2187.2-2006. All equipment for the measurement of air- blast overpressure will have a lower cut-off frequency of 2 Hz, and a frequency bandwidth of 2 to 500 Hz. Only calibrated monitors will be used for blast monitoring with copies of calibration certificates or other means of verification available on site.

Trigger levels for both air blast overpressure and ground vibration measurements will be set at a reasonable level below the blast impact criteria based on the experience of the Quarry Manager or blasting contractor with conditions at the Quarry. Instrument trigger levels will initially be set between 0.3 and 0.4mm/s and 111.7 and 111.9 dBL. This may be modified over time, if necessary.

### 7.3.2 Pre-Blast Setup

Prior to monitors being placed in the field, the following aspects will be verified for each instrument:

- Battery is charged. Note: batteries will be placed on charge immediately following data downloading from each blast.
- Date and time are correct.
- Location (Site) for each monitor is marked on the carry case.
- Instrument “fields” are correctly set to reflect the distance from the blast site to identified monitor location. The instrument fields, i.e. near, medium and far, determine the period of recording for air-blast once the monitor is triggered on either ground vibration or air-blast.
- **Table 7.2** identifies the distance range between the blast site and the monitor, the appropriate “field” setting and the duration of air-blast (air pressure wave) recording. It is noted that the proposed monitoring locations will require the instrument to be set on the “Far Field” setting.

Ground vibration will be recorded for a period of 20 seconds following triggering.

**Table 7.2 Blast Monitor Settings and Airblast Overpressure Recording Times**

Setting	Near Field	Mid Field	Far Field
Distance (Monitor to Blast) (m)	<300	300-1000	>1000
Recording Time (sec)	4	10	20

- Instrument trigger levels are set to minimise the potential for false initiation of the recording sequence by, for example, wind, but will record air-blast or ground vibration events approaching or greater than the standard vibration criteria of 115dBL and 5mm/s respectively. For the far field setting, triggers will typically be set between 0.3mm/s and 0.4mm/s and 111.7dBL and 111.9dBL.
- Settings are finally adjusted and a record of final settings is printed from the logger.

In order to ensure consistency, a sheet identifying the monitor settings for each blast monitoring site will be retained and adjusted as necessary to reflect, for example, increasing or decreasing distances to the blast site and monitoring results.



### 7.3.3 Instrument Siting

The instrument will be set up at the pre-selected monitoring point, between 3.5 and 30 m from the residence/infrastructure.

The instrument set-up procedures involve the following steps:

- Insert the soil spike into the ground and level the geophone.
- Set up microphone.
- Connect microphone and geophone to the monitor.
- Turn power on. Powering up the monitor initiates a self-check culminating in a display advice that the instrument is functioning properly.
- Press “start”. Following a countdown sequence, the monitor moves into a “standby mode” awaiting triggering.

Prior to initiation, a quarry Site Blast Check List form which includes verification that the monitors are in place and records salient weather data, e.g. wind direction and cloud cover, will be completed and signed by the shot-firer.

Following the completion of each blast, the following activities will be undertaken prior to the monitor being returned to the office for data downloading:

1. Press “stop” button.
2. Turn power off.
3. Disconnect microphone and geophone
4. Remove soil spike.
5. Pack up instrument.

### 7.3.4 Data Retrieval and Review

On the return of each monitor to the office, the blasting contractor will complete the following tasks:

- Retrieve/download the data from the monitor and save to the office computer.
- Review the data and delete any data pertaining to false triggers, i.e. triggers before the blast initiation time.
- Generate a results print-out sheet (in Microsoft Word) and insert relevant data relating to the blast, e.g. blast pattern, hole spacing, number of rows, number of holes, blast-hole diameter, stemming, MIC, explosives type and weight, delay type (interval and duration (ms)) and any relevant comments or observations.
- Record the name of the person who undertook the monitoring, and the time of measurement, in the results print-out sheet.
- Print off and distribute the results to Quarry Manager and any property owner that has requested to receive copies of the results. Results will be distributed by email, fax or in hardcopy as appropriate.



- Copies of the printouts, the quarry site blast checklist and details such as blast design, charging and tie-in pattern are retained on the Quarry environmental database.
- Place monitor battery on charge to await the next blast.
- In the event of an exceedance of blast criteria, or if a complaint is received, the blast contractor, in consultation with the Quarry Manager will initiate reactive management measures described in **Section 6.2.2**.
- Following the recording and distribution of results, and prior to the next blast occurring, the Quarry Manager and blast contractor will review the results to establish if variations to blast design are required for the next blasting event. Blast design and the continual improvement protocol are described in **Section 6.1.4**.

## 8.0 Incident Management, Notification and Reporting

### 8.1 Incident Identification

*Condition R2* of EPL 13172 requires that Walker Quarries must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident.

In accordance with the definition provided by Section 147 of the POEO Act, harm to the environment is deemed to be material if:

- it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
- it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations).

An incident which causes or threatens to cause material harm to the environment (and may or may not result in an exceedance of blast criteria) is referred to as a **Pollution Incident**.

An incident which is only as a result of an exceedance of blast criterion, is referred to as a **Non-compliance Incident**.

In accordance with Section 14 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013 No 54* (WHS Act 2013), a **Notifiable Incident** means:

- the death of a person, or
- a serious injury or illness of a person that is prescribed by the regulations, or
- a dangerous incident prescribed by the regulations.

### 8.2 Incident Notification

#### 8.2.1 Pollution Incidents

Immediately after Walker Quarries becomes aware of a pollution incident, i.e. without delay the following notifications will be made.

#### Department of Planning, Industry & Environment

Written notification of the incident will be emailed to the DPIE at the following address:  
[compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au).

Written notification of a pollution incident will:

- (a) identify the development and application number,
- (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident, i.e. non-compliance or pollution),

- (c) identify how the incident was detected,
- (d) identify when the Applicant became aware of the incident,
- (e) identify any actual or potential non-compliance with the conditions of this consent,
- (f) describe what immediate steps were taken in relation to the incident,
- (g) identify further action(s) that will be taken in relation to the incident, and
- (h) identify a project contact for further communication regarding the incident.

Where any of the above cannot be provided immediately following identification of the incident, e.g. identification of actual or potential non-compliance with the conditions of this consent, this will not be relied upon to delay written notification. If required, the notification will make commitment to provide follow-up information to satisfy any of the above requirements.

### **Environment Protection Authority**

The EPA's Environment Line service (131 555) will be called to provide initial notification and seek guidance on management.

Within seven days of becoming aware of the incident, Walker Quarries will provide written notification of the incident. Walker Quarries will follow instructions provided by the EPA with respect to further actions and reporting.

### **Other Authorities and Stakeholders**

Walker Quarries will also notify other regulatory authorities and local community (as relevant) in accordance with the procedures nominated in the Quarry Pollution Incident Management Response Management Plan (PIRMP).

## **8.2.2 Non-compliance Incidents**

Within seven days of becoming aware of a non-compliance, Walker Quarries will provide written notification to the DPIE by email to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au).

Written notification of a non-compliance will:

- (a) identify the development and application number,
- (b) out the condition of this consent that the development is non-compliant with,
- (c) why it does not comply and the reasons for the noncompliance (if known), and
- (d) what actions have been, or will be, undertaken to address the non-compliance.

It is noted that notification for the purpose of a pollution incident (refer to **Section 8.2.1**), where this describes the non-compliance, satisfies the notification requirements above.

## **8.2.3 Notifiable Incident (WHS Act 2013)**

In the event of a notifiable air-quality incident under the WHS Act 2013, the Quarry Manager will ensure that the regulator and the Secretary of the DPIE are notified after becoming aware the incident has occurred. The regulator and the Secretary of the DPIE will be notified by telephone or by writing (email or facsimile) within 48 hours of the incident occurring.

## 8.2.4 Complaint

Refer to **Section 6.2.2.1**.

## 8.3 Incident Management and Reporting

Following identification of an incident, an investigation will be commenced into the source of the pollution, non-compliance or complaint in accordance with the response and corrective actions described in **Section 6.2.2**. Any instruction provided by the EPA with respect to investigations, additional or conditional management or preparation of written reports will be followed.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, the Applicant must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

The Incident Report must include:

- (a) a summary of the incident,
- (b) outcomes of an incident investigation, including identification of the cause of the incident,
- (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence, and
- (d) details of any communication with other stakeholders regarding the incident.

If the incident was identified following receipt of complaint, the complainant will also be provided with a report confirming the incident, source or cause of the incident, actions taken and ongoing management to prevent subsequent incident (see also **Section 6.2**).

Within three months of the submission of an incident report, the Quarry Manager will review this BMECP and revise if required. Walker Quarries will notify the DPIE in writing that this review is being undertaken. If the review does lead to revision, the Company will submit the revised BMCEP to the DPIE within 3 months of the incident for approval.

A summary of all incidents, including dates of occurrence, corrective measures taken and success of these measures will be compiled and reported in the Annual Return to the EPA and the Annual Review to the DPIE.

## **9.0 Data Management and Reporting**

### **9.1 Review and Recording of Monitoring Data**

Walker Quarries will retain records of meteorological monitoring and blast monitoring for a minimum period of four years. Monitoring records will be made available to relevant government authorities following a written request.

### **9.2 Reporting and publication of monitoring data**

Walker Quarries will include a summary of all blast monitoring reports in the Annual Environmental Management Report. That document, once approved by the relevant government agencies, will be published on Walker Quarries website.

In accordance with the requirements of Section 66(6) of the *Protection of the Environment Operations Act 1997*, each month Walker Quarries will publish all monitoring data on Walker Quarries website. The data will be published within 14 days of receipt of results from the blasting contractor.



## 10.0 Roles and Responsibilities

**Table 10.1** outlines the roles and responsibilities of personnel with reference to blasting management.

**Table 10.1 Roles and Responsibilities**

Role	Responsibilities
Managing Director	<p>Ensure adequate resources are available to implement the BMECP.</p> <p>Ensure suitably trained personnel are available to implement the responsibilities of the Quarry Manager during any time of the Quarry Manager's absence from site.</p>
Quarry Manager, or his/her nominee	<p>Ensure the implementation of the BMECP.</p> <p>Ensure compliance with the BMECP.</p> <p>Ensure blast monitoring results are regularly reviewed/evaluated and uploaded to Walker Quarries website.</p> <p>Ensure reviews of meteorological forecasts are undertaken prior to the commencement of blasting activities.</p> <p>Implementation of the Blast Management System (see ).</p> <p>Relocate or postpone relevant activities in the event of adverse weather conditions.</p> <p>Provide primary contact for complaints and supply follow-up information to any complainant.</p> <p>Initiate investigations of complaints as received from the public or government agency.</p> <p>Prepare a report to government agencies or neighbours following a notifiable pollution incident (<b>Section 7.0</b>).</p> <p>Inform the Director of identified exceedances of blast criteria and any alterations to blast design or practice that will be implemented to rectify the exceedance. Coordinate the review of the BMECP (<b>Section 11.0</b>).</p>
All On-site Personnel	<p>Operate in manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment.</p> <p>Fully implement the relevant control measures within the BMECP.</p> <p>Report any anomalous events to the Quarry Manager.</p> <p>Follow any instructions provided by the Quarry Manager.</p>
All Truck Drivers	<p>Follow any instructions provided by any on-site personnel.</p>

## 11.0 Competence Training and Awareness

All personnel and contractors working at the Quarry undergo an induction. This induction includes information on blasting procedures and staff responsibilities.

After completing the induction, workers will sign a statement of attendance and records of this are kept in the administration office.

Regular toolbox meetings are held to discuss whole-of-site production, management, safety and environmental issues. Matters relating to blasting are raised during these meetings, when necessary.

## 12.0 Plan Review

In accordance with the *Environmental Management Strategy*, this BMECP will be reviewed within 3 months of any significant modifications to operations that may influence blast management, any internal or external audits undertaken of the Quarry and following any notifiable incident.

In accordance with the Environmental Management Strategy, and Condition 5(5) of DA 344-11-2001, the BMECP will be reviewed within three months of the submission of an:

- a) incident as defined by **Section 8.1**
- b) Annual Review<sup>3</sup>
- c) an Independent Environmental Audit completed in accordance with *Condition 5(14)* of DA 344-11-2001 and
- d) any modifications to this consent.

This will ensure the adequacy of the BMECP and allow for opportunities of adaptive management and continual improvement. Each review will also evaluate the effectiveness of the overall blast monitoring program and continual improvement protocol and whether it should be modified or scaled back.

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<sup>3</sup> The Annual Review is due by 30 September each year.

## 13.0 References

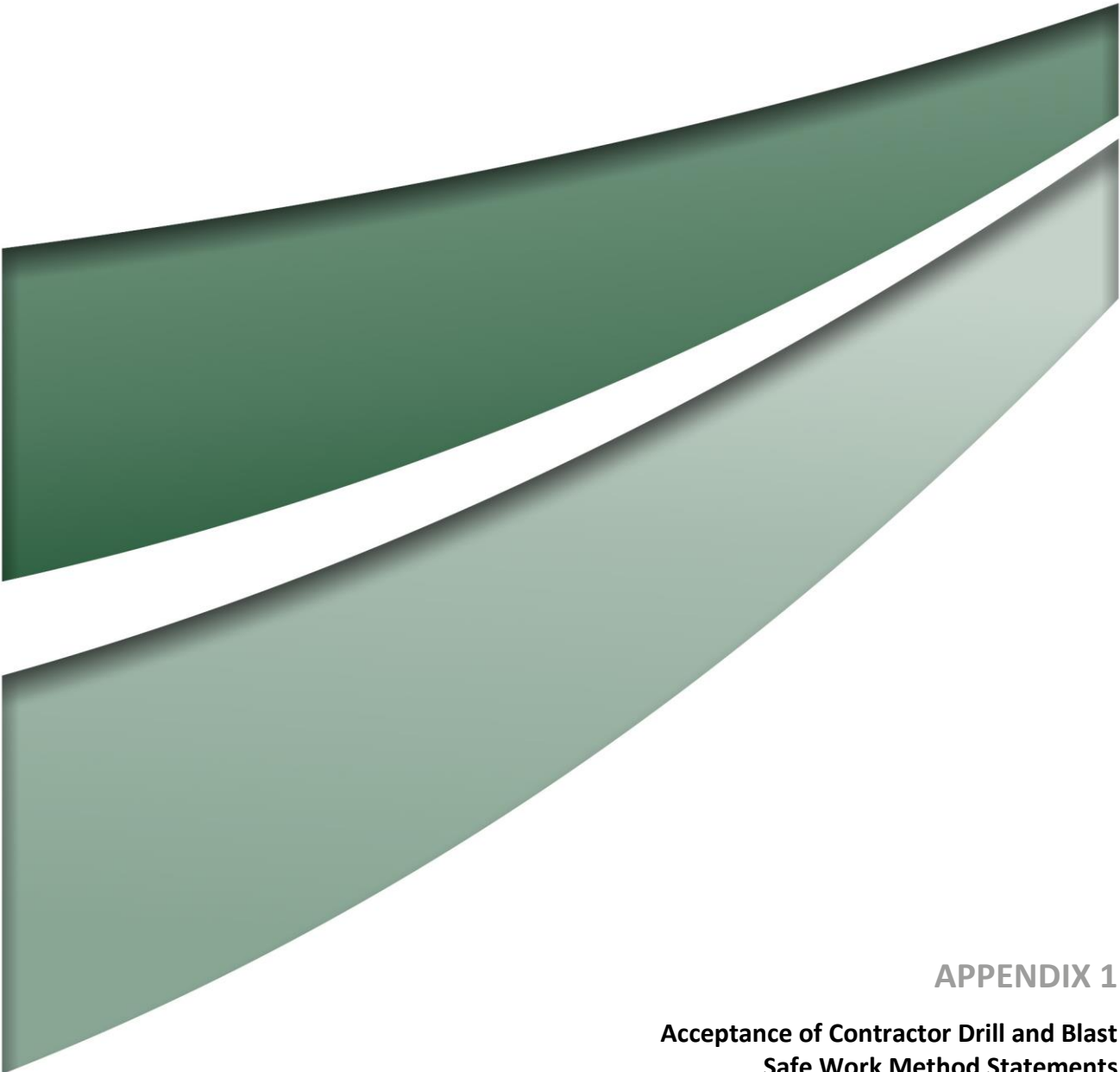
Environmental Protection Authority (EPA) (2013). Requirements for Publishing Pollution Monitoring Data.

Pacrim Environmental (Pacrim) (2001). Environmental Impact Statement Proposed Wallerawang Quarry. Prepared for Sitegoal Pty. Limited, November 2001 (report 01/206.1).

Ramboll Pty Ltd (2019). Wallerawang Quarry Modification Air Quality Assessment. Prepared for Umwelt (Australia) Pty Limited on behalf of Walker Quarries Pty Ltd.

RW Corkery & Co. Pty Limited (RWC) (2018). Environmental Management Strategy for the Wallerawang Quarry, November 2018.

*Documentation supplied (and agreed) to Walker Quarries by the Blasting Contractor.*



## **APPENDIX 1**

### **Acceptance of Contractor Drill and Blast Safe Work Method Statements**





Peter Andrews  
Drill & Blast Manager  
Premier Drill & Blast Pty Ltd

By email: peter@drillandblast.com.au

09 January 2019

Dear Peter,

**Re: Compliance with Clause 22 (Mines & Petroleum Regulations 2014)**

Reference is made to Clause 22 of the Work Health & safety Regulation 2014, which states the following....

**22 Contractor to prepare plan or use safety management system**

- (1) A contractor must not carry out mining operations or petroleum operations at a mine or petroleum site unless:
  - (a) the contractor:
    - (i) has prepared a contractor health and safety management plan in accordance with subclause (2) and has provided a copy of the plan to the operator of the mine or petroleum site, and
    - (ii) has obtained written notice from the operator that the operator has reviewed the plan and is of the opinion that the plan is consistent with the safety management system for the mine or petroleum site, and
    - (iii) has, so far as is reasonably practicable, implemented the plan, or

Walker Quarries formally accepts Premier Drill & Blast Safety Management System, as per Clause 22 (1) (a) (ii).

Yours Faithfully

Paul Hensley  
Walker Quarries Pty Ltd

