



Karuah Hard Rock Quarry
ABN: 15 093 914 937
Hunter Quarries Pty Ltd
Andersite Road, Karuah NSW 2324

W: www.hunterquarries.com.au
E: admin@hunterquarries.com.au
T: 02 4050 0304
P: PO Box 3284, Thornton NSW 2322

Karuah Hard Rock Quarry

Pollution Incident Response Management Plan

December 2024



Revision History

Version	Date Reviewed	Author	Amendment Details
1A	August 2012	SLR	Original PIRMP developed to satisfy the requirements under POEO Act 1997 following the introduction of the PELA Act 2011.
1B	March 2013	SLR	Updated contact details for Fire & Rescue NSW.
2	January 2014	HQPL	Comprehensive review and general update.
3	January 2015	HQPL	Comprehensive review and general update.
4	December 2024	IEMA & HQPL	Comprehensive review and update for revised PIRMP Guidelines (EPA, September 2022). Update for new Hunter Quarries' document template.

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Environment Protection Licence Details

Licence Holder:	Hunter Quarries Pty Ltd PO Box 3284 Thornton, NSW 2322 ABN: 15 093 914 937	
EPL Number:	EPL 11569	
EPL Anniversary Date:	16 January	
Premises:	Karuah Hard Rock Quarry Corner of Andersite Road and The Branch Lane Karuah, NSW 2324	
Authorised Business Contact:	Scott Ellerton Environment & Development Manager 0447 044 646 se@hunterquarries.com.au	
Website:	https://hunterquarries.com.au/reporting/	
Scheduled Activity:	Crushing, Grinding or Separating	
	Extractive activities	
Fee-Based Activity:	Crushing, Grinding or Separating	> 100,000 – 500,000 T annual processing capacity
	Extractive activities	> 100,000 – 500,000 T annually extracted or processed

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Terms, Definitions and Abbreviations

Abbreviation / Term	Meaning
BfMP	Bushfire Management Plan
COA	Conservation Offset Area
DA	Development Application
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS&MP	Environmental Management Strategy and Monitoring Program
EPA	NSW Environmental Protection Authority
EPL	Environment Protection Licence
F&FMP	Flora and Fauna Management Plan
HQPL	Hunter Quarries Pty Ltd
KHRQ	Karuah Hard Rock Quarry
km	Kilometre
MCC	Mid Coast Council
MSDS	Material Safety Data Sheet
NSW Planning	NSW Department of Planning, Housing and Infrastructure
PPE	Personal Protective Equipment
Planning Secretary	Secretary of NSW Department of Planning, Housing and Infrastructure
PIRMP	Pollution Incident Response Management Plan
POEO Act	NSW Protection of the Environment Operations Act 1997
POEO(G) Regulation	NSW Protection of the Environment Operations (General) Regulation 2022
SWMP	Site Water Management Plan
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment
TMP	Transport Management Plan
tpa	tonnes per annum

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1.0 Introduction

1.1 Overview of the Karuah Hard Rock Quarry

Mountain Industries obtained approval to operate the Karuah Hard Rock Quarry (KHRQ) in 1997, with the site subsequently purchased by Hunter Quarries Pty Ltd (HQPL) in 2002. In October 2004, HQPL applied to the then Department of Infrastructure, Planning and Natural Resources (now known as the Department of Planning, Housing and Infrastructure – NSW Planning) for approval to expand the quarry into adjoining lands (the Stage 2 extraction area) to allow the extraction of further hard rock resources.

Development Consent, DA 265-10-2004, was granted for the KHRQ by the Minister for Infrastructure, Planning and Natural Resources on 03 June 2005. The approved development consisting of:

- implementing the remainder of the approved Stage 1 quarry operation;
- extending the quarry operations into the Stage 2 area;
- upgrading and using existing infrastructure on site;
- rehabilitating the site by re-contouring and revegetating exposed surfaces; and
- producing up to 500,000 tonnes of andesite product a year over the next 22 years.

1.2 Project Site

The KHRQ site is located approximately five kilometres north-east of the village of Karuah, NSW. The overall site covers an area of approximately 78.5 Ha across the following properties:

- Lot 21 DP 1024564 consisting of material processing and product stockpiling;
- Lot 11 DP 1024564 consisting of the Stage 2 extraction area; and
- Part Lot 12 DP 1024564 consisting of the Conservation Offset Area (COA).

Figures 1 and 2 illustrate the site within its broader regional context and site layouts.

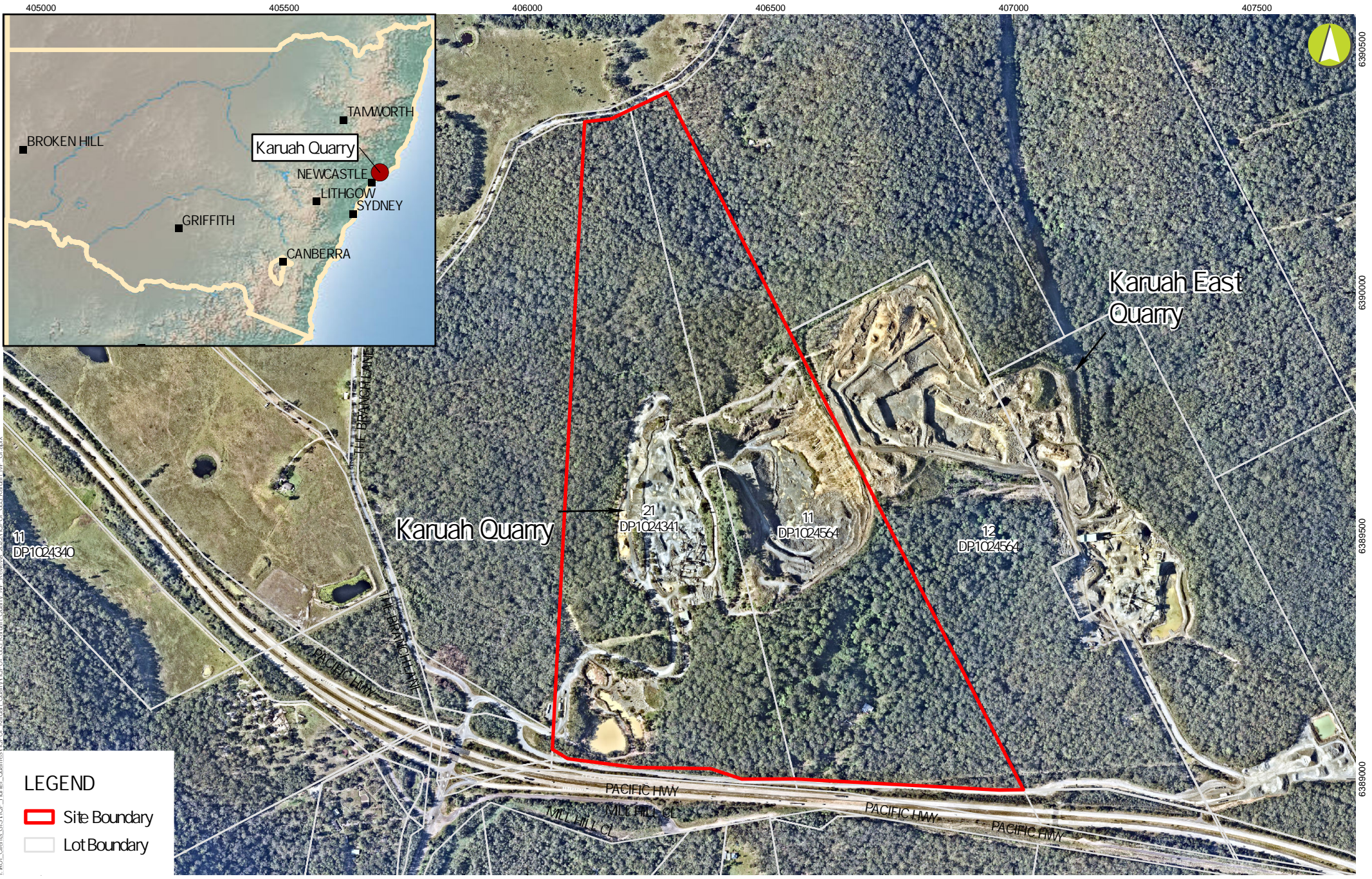
Figure 3 illustrates the water management system at the site.

1.3 Purpose

This document has been prepared to provide HQPL with a consistent approach to the management of environmental and pollution incidents; and sets out the minimum standards and processes to achieve this intended level of management. The Pollution Incident Response Management Plan (PIRMP) applies only to the KHRQ site described in **Section 1.2** and illustrated in **Figure 1 and 2**. As such, the purpose of this PIRMP is to:

- Minimise the chance of a pollution incident taking place and any subsequent environmental impact;
- Outline the key management and reporting strategies in case of a pollution incident occurring; and
- Ensure efficient communication and assist in the training of staff so that this plan is implemented as intended, and the procedures are followed to minimise risk to employees and the environment.

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LEGEND

- Site Boundary
- Lot Boundary



GDA 1994 MGA Zone 56
8/03/2024

Karuah Hard Rock Quarry

Pollution Incident Response Management Plan
FIGURE 1 - Regional and Local Context Plan



LEGEND

- ▭ Site Boundary
- ▨ Conservation Offset Area
- Lot Boundary

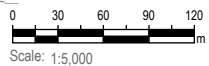


GDA 1994 MGA Zone 56
8/03/2024



LEGEND

- Lot Boundary
- Inpit Sump
- Licensed Discharge apoint 1 (EPL 11569)
- Bund
- Culvert / Gravity Fed Pipeline
- Dirty Water Drain
- Sediment Dam or Basin
- Site Office / Workshop



GDA2020 MGA Zone 56
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Karuah Hard Rock Quarry

Pollution Incident Response Management Plan

FIGURE 4 - Water Management Layout Plan

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2.0 Overview of the PIRMP

2.1 Objectives

Pollution Incident Response Management Plans (PIRMPs) are Management Plans that all holders of Environment Protection Licences (EPLs) are required to prepare in accordance with section 153A of the NSW *Protection of the Environment Operations Act 1997* (POEO Act).

The objectives of the PIRMP are to:

- minimise the risk of a pollution incident occurring as a result of their licensed activities, as they would have identified risks and the actions they propose to take to minimise and manage those risks;
- have established clear and effective notification, action and communication procedures to ensure the right people are notified, warned and quickly provided with updates and information they may need to act appropriately, including:
 - people who may need to be involved in incident responses – including staff at the premises; the Environment Protection Authority (EPA); and other relevant authorities (such as Fire and Rescue NSW, NSW Health and local councils);
 - industrial, commercial and residential neighbours and other members of the community; and,
- have properly trained staff and up-to-date incident management information available to ensure the potential impact of a pollution incident is minimised.

Part 5.7A of the POEO Act requires all licence holders to prepare, keep, test and implement their PIRMP; with Chapter 4 of the General Regulation setting out the specific information a licence holder must include in their PIRMP.

The general requirements of the PIRMP are to:

- All licensees must prepare a PIRMP (section 153A);
- A PIRMP must be in the form required by the regulations and must include the information detailed in the POEO Act (section 153C) and the General Regulation (section 72 and section 73);
- Licensees must keep the PIRMP at the premises the environment protection licence relates to, or where the relevant activity takes place (in the case of trackable waste transporters and mobile plant) (section 153D of the POEO Act) and make certain parts of the PIRMP available on a publicly accessible website of the licensee, or alternatively provide a copy upon written request (section 74 of the General Regulation);
- Licensees must test their PIRMP in accordance with the regulations (section 153E of the POEO Act and section 75 of the General Regulation); and
- Licensees must implement their PIRMP immediately if a pollution incident occurs that causes or threatens material harm to the environment (as defined in section 147 of the POEO Act) (section 153F of the POEO Act).

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2.2 Definitions

The POEO Act defines **pollution** as:

“Pollution means – water pollution, air pollution, noise pollution, or land pollution.”

The POEO Act defines a **pollution incident** as:

“Pollution Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.”

The POEO Act defines **material harm to the environment** as:

- “(a) harm to the environment is material if:*
- (i) It involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
 - (ii) 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), and*
- (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”*

Notification is required if a pollution incident causes or threatens to cause material harm to the environment; and even if the incident only occurs within the licence holder’s premises.

2.3 Availability of the PIRMP

A hard copy of this plan must be kept at the licensed premises and shall be made readily available on request by an authorised EPA officer and to any person who is responsible for implementing this plan.

Parts of the plan must be available either on a publicly accessible website, or by providing a copy of the plan to any person who makes a written request, in accordance with section 74 of the POEO (General) Regulation 2022. As such, a redacted soft copy of this will also be maintained on the Hunter Quarries’ website.

2.4 Key Contacts

If a pollution incident arises or is likely to arise from activities at the KHRQ, the individual/s involved must promptly inform the Quarry Manager and the Environment & Development Manager. These primary contacts will then either initiate the response plan or delegate an authorised secondary contact listed in **Table 1** below to activate the plan.

The person responsible for activating the PIRMP will also hold responsibility for notifying the relevant authorities and managing the response and/or investigation to the pollution incident, this can also be delegated from a supervisor to an alternative person/s.

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Table 1 Key Contacts to Implement the PIRMP.

Contact	Role	Contact Details
Primary Contacts		
Darryn Bosch	Quarry Manager	
Scott Ellerton	Environment & Development Manager	
Secondary Contacts		
Christian Sasse	Quarry Supervisor	
David Long	Environment Projects Engineer	
Site Contacts		
HQ Weighbridge	–	UHF – CH25 02 4050 0304
KEQ Weighbridge	–	UHF – CH15 02 4050 0304
Alternative Contacts		
Dylan Nagle	General Manager	
Janelle Egginton	WHS Coordinator	

Note: Whilst personnel contact details are listed in the controlled version of the PIRMP maintained onsite, they do not appear in the version published to the Hunter Quarries' website under provision of the Privacy and Personal Information Protection Act 1998.

3.0 Regulatory Requirements of the PIRMP

The requirements of the PIRMP as outlined by section 5.7A of the POEO Act 1997 and the POEO (General) Regulation 2022 are summarised by **Table 2**.

Table 2 Summary of Detailed PIRMP Requirements of the General Regulation.

Clause Number	Legislative Requirements	Section Addressed
section 5.7A of the POEO Act – Duty to Prepare and Implement PIRMP		
153A	Duty of licence holder to prepare pollution incident response management plan <i>The holder of an environment protection licence must prepare a pollution incident response management plan that complies with this Part in relation to the activity to which the licence relates.</i>	This PRIMP
153B	EPA may direct other persons to prepare pollution incident response management plan <i>The EPA may, in accordance with the regulations, require the occupier of premises at which industry is carried out to prepare a pollution incident response management plan that complies with this Part in relation to activities at the premises.</i>	This PRIMP
153C	Information to be included in plan <i>A pollution incident response management plan must be in the form required by the regulations and must include the following—</i>	This PRIMP
	<i>a) the procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to—</i>	Section 4.0 and Section 8.3
	<i>i. the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and</i>	
	<i>ii. the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and</i>	
	<i>iii. any persons or authorities required to be notified by Part 5.7,</i>	
<i>b) a detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution,</i>	Section 8.2 and Appendix 1	
<i>c) the procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made,</i>	Section 8.3 and Section 8.4	
<i>d) any other matter required by the regulations.</i>	This PRIMP	
153D	Keeping of plan <i>A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is kept at the premises to which the relevant environment protection licence relates, or where the relevant activity takes place, and is made available in accordance with the regulations.</i>	Section 2.3
153E	Testing of plan <i>A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is tested in accordance with the regulations.</i>	Section 9.2

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Clause Number	Legislative Requirements	Section Addressed
153F	Implementation of plan <i>If a pollution incident occurs in the course of an activity so that material harm to the environment (within the meaning of section 147) is caused or threatened, the person carrying on the activity must immediately implement any pollution incident response management plan in relation to the activity required by this Part.</i>	This PRIMP
section 72 of the POEO(G) Regulation – Additional matters to be included in PIRMP		
72	<i>For the Act, section 153C(d), the following matters must be included in a PIRMP.</i>	This PRIMP
72 (a)	<i>A description of the hazards to human health or the environment associated with the activity to which the licence relates (the relevant activity),</i>	Section 5.0 and Appendix 1
72 (b)	<i>The likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood,</i>	Section 5.0 and Appendix 1
72 (c)	<i>Details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity,</i>	Section 8.1
72 (d)	<i>An inventory of potential pollutants and the purpose on the premises or used in carrying out the relevant activity,</i>	Section 6.0
72 (e)	<i>The maximum quantity of any pollutant that is likely to be stored or held at particular locations, including underground tanks, at or on the premises to which the license relates,</i>	Section 6.0
72 (f)	<i>A description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain to control a pollution incident,</i>	Section 7.0 and Figure 4
72 (g)	<i>The names, positions and 24-hour contact details of those key individuals who:</i> i. <i>are responsible for activating the plan, and</i> ii. <i>are authorised to notify relevant authorities under the Act, section 148, and</i> iii. <i>are responsible for managing the response to a pollution incident,</i>	Section 2.4
72 (h)	<i>The contact details of each relevant authority referred to in the Act, section 148,</i>	Section 4.2
72 (i)	<i>Details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises near the premises to which the licence relates or where the scheduled activity is carried on,</i>	Section 4.3
72 (j)	<i>The arrangements for minimising the risk of harm to persons who are on the premises or who are present where the scheduled activity is being carried on,</i>	Section 8.5
72 (k)	<i>A detailed map, or set of maps, showing the location of the premises to which the licence relates, the surrounding area likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of stormwater drains on the premises,</i>	Figure 5 and Section 8.2
72 (l)	<i>A detailed description of how an identified risk of harm to human health will be reduced, including, as a minimum, by early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce the risk,</i>	Section 4.3 and Section 8.1
72 (m)	<i>The nature and objectives of a staff training program in relation to the PIRM plan,</i>	Section 9.1
72 (n)	<i>The dates on which the PIRM plan has been tested and the name of the person who carried out the test,</i>	Section 9.2
72 (o)	<i>The dates on which the PIRM plan is updated,</i>	Revision History
72 (p)	<i>The way in which the PIRM plan must be tested and maintained.</i>	Section 9.2

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4.0 Notification of Pollution Events

Part 5.7 of the POEO Act specifies notification requirements for pollution incidents. All employees and contractors are legally required to follow the notification requirements.

4.1 Notification to Internal Stakeholders

The employer, occupier of the premises or any person carrying out an activity which causes a pollution incident must immediately notify the Quarry Manager and the Environment & Development Manager. If the incident has caused or threatens to cause material harm, then the relevant authorities must also be notified immediately.

Roles & Responsibilities

The following roles and responsibilities for communicating a pollution incident once reported are summarised by **Table 3**.

Table 3 *Roles and Responsibilities during a Pollution Incident.*

Role	Responsibility
Environment & Development Manager (or suitable delegate)	<ul style="list-style-type: none"> When notified of a pollution incident, enact the PIRMP, including notifications to relevant authorities and external stakeholders. Record all relevant information regarding this incident. Complete follow-up PIRMP tests within one month of incident.
Quarry Manager (or suitable delegate)	<ul style="list-style-type: none"> Determine the extent of the pollution incident and contact the executive. Determine and implement all reasonably practicable measures to minimise the impact of the pollution incident where safe to do so.
Staff / Contractors	<ul style="list-style-type: none"> Immediately report any incidents to Quarry Supervisor after the person becomes aware of a pollution incident.

4.2 Notification to Relevant Authorities

First Notification

If there is an immediate threat to human health or the environment, the ‘first notification’ to relevant authorities is warranted for contact and direction.

The ‘first notification’ to be issued to emergency services, including Fire and Rescue, Police, Ambulance by calling 000.

Relevant Authorities Notification

In the case of a pollution incident that causes or threatens to cause material harm to the environment, authorities are to be advised of the incident in accordance with Part 5.7A of the POEO Act.

Table 4 summarises the relevant authorities that are to be notified following a pollution incident.

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Table 4 Relevant Authorities to Report Pollution Incidents.

Relevant Authority	Contact Details	Status
NSW Environment Protection Authority	131 555	Statutory under POEO Act.
NSW Health Ministry, Hunter New England Local Health District	02 4921 3000	
Fire & Rescue NSW	1300 729 579	
Safework NSW	131 050	
MidCoast Council	02 7955 7777	
NSW Planning	1300 420 596 NSW Major Projects Portal	If deemed necessary under the Development Consent (DA 265-10-2004).
NSW Resource Regulator	1300 814 609	If deemed necessary under the NSW WHS (Mines & Petroleum Sites) Act 2013.

Information to be Reported

In accordance with section 150 of the POEO Act the following information is to be provided:

1. Details of the incident:
 - a. the time, date, nature, duration, and location of the incident,
 - b. the location of the place where pollution is occurring or is likely to occur,
 - c. the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known,
 - d. the circumstances in which the incident occurred (including the cause of the incident, if known),
 - e. the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known,
 - f. other information prescribed by the regulations.
2. Any information known to the person reporting the incident at the time of notification.
3. Any further information that became known to the person reporting the incident following the initial notification.

4.3 Notification to External Stakeholders

In the event of an incident, communicating with the local community is an important element in managing the response to any incident. Notifications will be undertaken at the determination of the Environment & Development Manager. The following methodology is proposed to be utilised as required:

- **Early warnings:** Same day SMS Text Message Notifications to identified landholders that may be affected by the incident.
- **Updates:** Continued daily SMS Text Message Notifications to identified landholders if the incident continues to occur over multiple days.
- **Reporting:** Formal reporting, such as letter drops, if required to all surrounding landholders located within 2 km of the quarry site following completion of the incident in accordance with the Karuah Hard Rock Quarry's Development Consent (DA 265-10-2004).

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The information provided to the community will be relevant to the incident, and may include the following:

- The type of incident that occurred;
- Potential impacts to local landholders and the community;
- Karuah Quarry site contact details; and
- Advice or recommendations based on the incident type or scale.

In the event that the incident is being coordinated by emergency services, communications would be under the control of those services. HQPL would assist the governing authorities as directed and consider the following options for providing warnings and updates to the community on pollution incidents:

- Communication with the community;
- Public notifications / notices / meetings;
- Direct phone contact with any immediate neighbours directly impacted by the incident; and/or
- Letterbox drops of incident information and site contacts.

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5.0 Description and Assessment of Hazards.

To minimise risk to human health or the environment, HQPL has prepared a risk assessment which outlines the identified hazards on site. The key potential major hazards at the site may include:

- Emissions (such as blast plume or fume) resulting in poor air quality;
- Uncontrolled discharges of sediment-laden water after major storm events; and
- Spills (such as hazardous goods or hydrocarbons) resulting in land, surface water and/or groundwater contamination.

5.1 Risk Assessment

A risk assessment matrix was developed to consider risks against a consistent framework within the Hunter Quarries business group. **Table 5** outlines considerations for potential pollution incident consequences and **Table 6** summarises the considered likelihood of occurrences.

An Environmental Risk Assessment was subsequently undertaken to assess the impact of potential hazards that could cause pollution incidents and the likelihood of the pollution event occurring. The Risk Assessment is summarised below in **Appendix 1**.

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Table 5 Risk Assessment Consequence Framework.

Rating	Health & Safety	Environment	Image & Reputation/ Community	Legal and Compliance	Financial Impact
5 Catastrophic	<ul style="list-style-type: none"> Multiple fatalities (3 or more fatalities in a single incident) Multiple cases (5 or more) of Permanent Damage Injuries or Diseases that result in permanent disabilities in a single incident 	<ul style="list-style-type: none"> Unconfined and widespread environmental damage or effect (permanent; > 10 years) Requires major remediation 	<ul style="list-style-type: none"> Complete loss of trust or social unrest likely leading to closure Loss of multiple major customers or large proportion of sales contracts Security incident resulting in multiple fatalities or major equipment damage Formal expression of significant dissatisfaction by government 	<ul style="list-style-type: none"> Major litigation / prosecution at corporate level Nationalisation / loss of licence to operate 	<ul style="list-style-type: none"> Environmental reworks cost between more than \$100k Plant/Property > \$500k
4 Major	<ul style="list-style-type: none"> Single incident resulting in human fatality Permanent Damage Injury or Disease that results in a permanent disability- less than 5 cases in a single incident 	<ul style="list-style-type: none"> Off-site degradation which has persistent but reversible impacts Long-term (1 to 2 years) impact Requires significant remediation Prosecution potential high under environmental laws 	<ul style="list-style-type: none"> Security stakeholder incident resulting in single loss of life or equipment damage Topic of broad societal concern and criticism Negative national media coverage Investigation from government Community discontent and impact on viability of business Loss of major customer 	<ul style="list-style-type: none"> Major litigation / prosecution at Division level NEWT: Breach of external requirement (license, legislation, regulation, contract etc.) with high potential for prosecution and/or high impact. 	<ul style="list-style-type: none"> Environmental reworks cost between \$50k and \$100k Plant/Property between \$100K and \$500K
3 Moderate	<ul style="list-style-type: none"> Lost Time Injury (LTI) Lost Time Disease (LTD) Permanent Disabling Injury (PDI) Permanent Disabling Disease (PDD) Single incident that results in multiple medical treatments 	<ul style="list-style-type: none"> On-site/off-site degradation (< 2 weeks) which has reversible impacts Short-term impact (< 6 month) that requires moderate remediation 	<ul style="list-style-type: none"> Local adverse media attention Loss of reputation or ability to secure work in local area, complaints that result in changes to external requirements 	<ul style="list-style-type: none"> Non-compliance with external requirement with moderate potential for prosecution and penalty or fine. 	<ul style="list-style-type: none"> Environmental reworks cost between \$10k and \$50k PIRMP Activates Plant/Property between \$20K and \$100K
2 Minor	<ul style="list-style-type: none"> Medical Treatment Injury (MTI) Medical Treatment Disease (MTD) Restricted Work Injury (RWI) Restricted Work Disease (RWD) 	<ul style="list-style-type: none"> Near source and confined with work area Temporary or may require minor remediation (typically < week) 	<ul style="list-style-type: none"> Multiple community complaints or complaints that require changes to internal operating procedures. 	<ul style="list-style-type: none"> Repeated non-compliance with internal procedure. Non-compliance with external requirement with low potential impact 	<ul style="list-style-type: none"> Environmental reworks cost between \$5k and \$10k Plant/Property between \$5k and \$20k
1 Negligible	<ul style="list-style-type: none"> First Aid Injury (FAI) or illness (not considered disease or disorder) 	<ul style="list-style-type: none"> Near source and confined No lasting environmental damage or effect (typically < day) Requires minor or no remediation 	<ul style="list-style-type: none"> Community complaint resolved with no changes to existing operating procedures. 	<ul style="list-style-type: none"> Internal regulation breaches without fine or penalty 	<ul style="list-style-type: none"> Environmental reworks cost < \$5k Plant/Property < \$5k

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Table 6 Risk Assessment Likelihood Framework.

Rating	E - Rare	D - Unlikely	C - Possible	B - Likely	A - Almost Certain
LIFETIME OR PROJECT OR TRIAL OR FIXED TIME PERIOD OR NEW PROCESS / PLANT / R&D	Unlikely to occur during a lifetime OR Very unlikely to occur OR No known occurrences in broader worldwide industry	Could occur about once during a lifetime OR More likely NOT to occur than to occur OR Has occurred at least once in broader worldwide industry	Could occur more than once during a lifetime OR As likely to occur as not to occur OR Has occurred at least once in the mining / commodities trading industries	May occur about once per year OR More likely to occur than not occur OR Has occurred at least once within the Company	May occur several times per year OR Expected to occur OR Has occurred several times within the Company
5 Catastrophic	15 (M)	19 (H)	22 (H)	24 (H)	25 (H)
4 Major	10 (M)	14 (M)	18 (H)	21 (H)	23 (H)
3 Moderate	6 (L)	9 (M)	13 (M)	17 (H)	20 (H)
2 Minor	3 (L)	5 (L)	8 (M)	12 (M)	16 (M)
1 Negligible	1 (L)	2 (L)	4 (L)	7 (M)	11 (M)

6.0 Inventory of Potential Pollutants

A range of chemicals and substances are utilised and stored onsite for purposes which include water treatment, cleaning, fuel, and lubricants for machinery maintenance. An inventory of pollutants is provided below in **Table 7**.

The site layout and locations of potential pollutants and safety equipment are illustrated by **Figure 4**.

Table 7 Detailed Inventory of Potential Pollutants.

Relevant Authority	Contact Details	Status
North Fork Tea Tree Hand Cleaner	Storeroom & Amenities	3 Bottles
CRC Electrical Contact Cleaner	HQ Workshop, KEQ Control Room, Container & fitters Utes	6 Cans
Armor All Protectant Car Wash	Storeroom & all vehicles	10 Bottles
Sikaflex 221 Adhesive	HQ Workshop, KEQ Control Room, Container & fitters Utes	6 Tubes
Aerostart Engine Starter	HQ Workshop, KEQ Control Room, Container & fitters Utes	2 Cans
TW20 Truck Wash	HQ Workshop KEQ Container	20 L
WD-40	HQ Workshop, KEQ Control Room, Container & fitters Utes	10 Cans
Ajax Spray n Wipe	Storeroom & Amenities	3 Bottles
Enduron Low SAPS 10w-40 Engine Oil	HQ Workshop KEQ Container	20 L
Brake and Clutch Fluid	HQ Workshop, KEQ Control Room, Container & fitters Utes	20 L
Diesel	HQ Fuel Tank - 28,000 KEQ Tank 1 - 52,000 KEQ Tank 2 - 49,000 KEQ Genset - 4,000	133,000 L
Argoshield Light	HQ Workshop, KEQ Container & Fitter Utes	6 Cylinders
Battery Acid	All Machines, Vehicles & Mobile Plant	1 L
Paint Marker Pen	HQ Workshop, KEQ Control Room, Container & fitters Utes	1 Gram
Ad Blue Fuel Application	KEQ Oil Container	20 L
Metsun 600 Herbicide	Contractors Utes	500 Grams
Blitzem Wasp Killer & Nest Destroyer	Storeroom Offices Workshop	350 Grams
Artline White Board Cleaner	Offices Weighbridge Workshop	1 L
Mortein Fly Spray	Offices Weighbridge Workshop	8 cans
Sika Boom Expanding Foam	KEQ Control Room	1 can
Windex Glass Cleaner	Storeroom & all vehicles	6 Bottles
Spot Marking paint- White	HQ Workshop, KEQ Control Room, Container & fitters Utes	6 Cans
Air Wick Air Freshener	Storeroom & Amenities	16 cans
Selleys Liquid Nails	HQ Workshop, KEQ Control Room, Container & fitters Utes	4 Tubes
Unleaded Petrol	HQ Workshop	5 L
Septone Citra Scrub Hand Cleaner	HQ Workshop & KEQ Control Room	20 L

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Relevant Authority	Contact Details	Status
Septone Protecra Gold	Storeroom & Amenities	5 L
Quarry Products	Quarry Floor Stockpiles	NO
Quarry Products - Stabilized	Quarry Floor Stockpiles	NO
Acetylene	Workshop & Fitters Utes	4 Bottles
Metholayted Spirits	All Areas	80 L
Norfolk Hand Cleaner	Storeroom & Amenities	12 bottles
Carburettor Cleaner	HQ Workshop, KEQ Control Room, Container & fitters Utes	1 Can
Maxiflox	KEQ Dam Container	1000 kg
Mineral Turpentine	HQ Workshop	2 L
Anti-seize	HQ Workshop, KEQ Control Room, Container & fitters Utes	3 Cans
Silastic	HQ Workshop, KEQ Control Room, Container & fitters Utes	1 Box
PVC Pipe Cement	HQ Workshop, KEQ Control Room, Container & fitters Utes	500 mL
Aluclean	Workshop Locker	5 L
Zexa Sure Shield Hand Sanitiser	All Areas	5 L
Megapoxy Part A & B	KEQ Crushing	40 x Buckets
Areoguard	Storeroom, Offices, Workshop	12 x cans
Oxygen, Compressed	HQ Workshop, KEQ Container & Fitters Utes	4 Bottles
Volvo Super Hyrdraulic Oil	HQ Workshop & KEQ Container	20 L
Coolant VCS Ready Mixed	HQ Workshop & KEQ Container	5 L
Volvo Automatic Transmission Fluid AT102	HQ Workshop & KEQ Container	20 L
Volvo Ultra Diesel Engine Oil VDS-3 SAE 15W40	HQ Workshop & KEQ Container	20 L
Chemtech Brake Clean	HQ Workshop, KEQ Control Room, Container & fitters Utes	6 Cans
Feurst Stimix S200 (Stickey Mix)	Workshop (Rear) Red Storage Container	2400 cc
Grazon Extra	Contractors Utes	
Hotshot Herbicide	Contractors Utes	5 L
Roundup Herbicide	Weighbridge Store	5 L
Duck Hospital Grade Disinfectant	Storeroom & Amenities	8 bottles
Galmet Duragal Metal Protection	Workshop	4 x 350g
Polo Citrus	Main Plant	1000 L
Pro Diesel 15W-40 CJ4 (Atlantic Oil)	HQ Workshop & KEQ Container	1000 L
Industrial Gear Oil 150 (Atlantic Oil)	HQ Workshop & KEQ Container	1000 L
Hy - Lube ISO 68 (Atlantic Oil)	HQ Workshop & KEQ Container	1000 L
Multiplex - Extreme EP 2 (Blue) (Atlantic Oil)	HQ Workshop & KEQ Container	3 x 20 kg Drums 6 x 24 Cartons
Calcium Chloride Dihydrate	Shed	Pod
Dulux Metalshield High Build ZP Primer	KEQ Container	20 L
Jotacote QD Enamel Paint	KEQ Container	20 L
Dulux Metalshield QD Enamel paint	KEQ Container	20 L
Dulux Metalshield Brush Thinner	KEQ Container	20 L

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Relevant Authority	Contact Details	Status
Barmac Out of Bounds Insecticide	KEQ Container	1 L
Germ Buster Hand Sanitiser	KEQ & HQ	200 Bottles
Pro Bloc Sunscreen	All Areas	50 Bottles
ACTA 1080 Concentrate	KEQ & HQ	Baits
Sodium Bisulphate	KEQ & HQ	5 Bags
Norfolk Toilet & Urinal Cleaner	Storeroom & Amenities	12 Bottles
Norfolk Urinal Blocks	Storeroom & Amenities	4 kg
Weedmaster Duo	KEQ Site Shed	20 L
LPG Gas	HQ Workshop & KEQ Site Shed	4 bottles
Accent Musk Disinfectant	All Areas	5 L
Cement/Fly Ash/Lime Blends, Slag/Lime Blends, Slag/Lime/Fly ash Blends	KEQ Crushing Plant, Pugmill & Container	20 Ton
Hydrochloric Acid	KEQ Dam Shed	20 L

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Figure 4 Location of Potential Pollutants and Safety Equipment.

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7.0 Safety Equipment

Chemicals and fuels are stored within purpose built and bunded areas (e.g. diesel above ground storage, oil storage areas.) Spill kits are located adjacent to chemical or oil storage area. These spill kits are inspected monthly and make replacements as required which are reported on.

Locations of Personal Protective Equipment (PPE) and containment equipment are available if required for all employees. **Table 8** outlines the safety equipment kept on site in accordance with clause 72(f) of the POEO(G) Regulation.

Table 8 *Detailed Inventory of Potential Pollutants.*

Product Type	Location/s of where equipment is stored	Total Quantity	Calibrations/Maintenance Requirements
Fire Extinguisher	Office and Workshop	Numerous	Inspected Regularly
Spill Kit	Office and Workshop	Numerous	
PPE (PVC Gloves, Safety Glasses)	Issued to all staff, Office and Workshop.	4	
MSDS	Office and Workshop	-	
First Aid	Light Vehicles, Office and Workshop.	Numerous	
Safety Signage	Various locations	Numerous	

8.0 Actions to be Taken

8.1 Pre-Emptive Actions

This section details actions taken to minimise or prevent risk of harm to human health or the environment from the activities undertaken at the Karuah Hard Rock Quarry site.

- Bushfire – Maintain fire breaks, hazard reduction burns as required.
- Dust – Dust levels are controlled by keeping road surfaces and dust piles moist during wind events. The use of water carts to spray the road.
- Hydrocarbon Leaks – All refuelling will occur with designated areas and all hydrocarbons will be stored in 110% bunds/berms.
- Chemical Spills – Spill kits on sit to effectively minimise risk of emissions leaving site.
- Site environmental and safety management plans;
- Regular inspections and maintenance;
- Environmental monitoring;
- Correct storage and waste management; and
- Staff training and awareness.

The site makes all attempts to prevent pollution incidents. In a situation where a pollution incident is imminent and may potentially cause detrimental impacts to human health or the environment, the site will contact the necessary stakeholders to provide as much early warning as possible.

8.2 During or Immediately After a Pollution Incident

Upon identification of a pollution incident, initial incident response includes notification of a competent person who can contain the pollution event, if safe to do so, in accordance with internal reporting procedures.

The ‘competent’ person will then implement the relevant controls as outlined in the Environmental Risk Assessment provided in **Appendix 1**. If an evacuation is required, this shall be completed in accordance with site procedures.

If safe to do so, environmental controls for the containment of a pollution incident will be implemented, which may include:

- Emergency spill kits;
- Mobile water trucks;
- Application of flocculate and increased Erosion and sediment control measures; or
- Mobilisation of available earthmoving equipment.

Figure 5 illustrates the likely distribution of potential pollution.

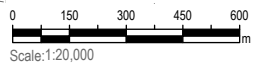
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LEGEND

- ▭ Site Boundary
- ▭ Quarry Operation Boundary
- Lot Boundary
- 1km Radius



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Karuah Hard Rock Quarry

8.3 Immediate Notification of a Pollution Incident

Section 148 of the POEO Act requires holders of an EPL to report pollution incidents “immediately” instead of “as soon as practicable.” This means that licensees must report pollution incidents without delay to the relevant authorities in accordance with the process outlined by **Section 4.3** of this **PIRMP**.

8.4 Post-Incident Actions and Clean-Up

In the event of a pollution incident, a detailed incident investigation will occur, and the findings of this will be sent to the EPA (and other relevant agencies if deemed relevant) within 7x days in the form of an Incident Report.

If HQPL was notified of the pollution incident by a member of the public, then the complaint will be also logged in accordance with internal community complaints procedures.

If necessary, the following will occur post pollution incident:

- Hire specialised contractors for clean-up operations, as deemed necessary.
- Coordination with all relevant personnel and authorities.
- Maintain detailed records of the incident, including the nature of the spill, response actions taken, and any environmental impact.

However, for significant or catastrophic incidents, consent (or permission) of key relevant agencies will be sought prior to disturbing the scene unless an immediate emergency response is required.

8.5 Minimisation of Harm to Persons on the Premises

General information relating to pollution incidents and emergency response shall be included in site inductions. All staff and contractors must complete this induction prior to undertaking any onsite operations.

If a pollution incident requires the evacuation of the site, actions will be completed in accordance with the site Evacuation Procedure. All staff are informed on the location of muster point through site inductions, signage, and ongoing training. All records of staff inductions are to be maintained, updated as required and available upon request.

HQPL is committed to minimising the harm in the event of a pollution incident. Key measures to minimise harm to persons on the premises include (but are not limited to):

- Personal Protective Equipment (PPE).
- Conducting risk assessments when appropriate.
- Immediate response strategy including emergency assemblage points, relevant contact details, stop work instructions and evacuation strategies.
- Employee pollution incident training and procedures.
- Environmental and employee health monitoring.
- Reduction of pollutants on site.

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- Regular assessment of potential pollutants on site (location, amount, potential risk, mitigation measures).
- Establishing exclusion zones / perimeters to limit exposure of employees to pollutants.
- Advise relevant regulatory authorities if spill is considered to be significant or threatening material harm and adhere to any instructions issued.
- Where possible, contain spillage in designated containers/areas.
- Remove contaminated soil and or/absorption material to an approved disposal site as advised by the EPA or Council.
- Regular site inspections.

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9.0 Training, Testing and Review

9.1 Training and Awareness

Staff will be trained and inducted on the PIRMP prior to undertaking any operations on site and will include potential scenarios that may require implementation of the plan. Records of inductions will be kept on site, and staff will undertake yearly training to ensure they remain up to date with procedures.

9.2 Testing and Periodic Review

The PIRMP will be tested at least once annually to ensure the information included in the plan is accurate and up to date, and that each plan is capable of being implemented in a workable and effective manner. The testing of the PIRMP will involve a desktop exercise or scenario, and practical exercises or drills. The testing will cover all components of the PIRMP, including the effectiveness of training.

The PIRMP will be tested and reviewed within one month from the date of any pollution incident that triggers this PIRMP. The review will also consist of assessment of any additional hazards and control measures.

Any updates to the PIRMP will be detailed within the **Revision History** section of this document.

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10.0 References

EPA Guideline

- NSW Environment Protection Authority. (2022). *Guideline: Pollution Incident Response Management Plans*. State of NSW. Available at: www.epa.nsw.gov.au

Statutory Approvals

- Development Consent, DA 265-10-2004
- Environment Protection Licence, EPL 11569

Environmental Management Plans

- Environmental Management Strategy & Monitoring Program, ENV-MP-KHRQ001
- Bushfire Management Plan, ENV-MP-KHRQ002
- Flora & Fauna Management Plan, ENV-MP-KHRQ003
- Site Water Management Plan, ENV-MP-KHRQ006

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Appendix 1: Environmental Risk Assessment

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Risk Ref. Number	Risk Category	Relevant Sites	Potential Hazard	Relevance to Project	Existing Controls	Risk Type	Risk Control Effectiveness	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
1	Surface Water	All Sites	Uncontrolled discharge due to heavy rain causing erosion and sedimentation and/or water quality impacts offsite. Within both the construction and operational phase of the operation.	Sediment dams discharge to creeks flowing into Port Stephens.	1. Erosion and sediment control structures (main dam). 2. Surface water monitoring as required 3. Inspections. 4. Ability to pump water 5. Large water usage at site for processing and operations.	Environment	Satisfactory	2 Minor	C - Possible	8 (M)
2	Surface Water	All Sites	Unexpected failure of dams at site causing offsite discharge and PIRMP incident. Impacts to human health and the environment.	Dams are at site.	1. Dams constructed to Blue Book. 2. Engineering review of water management structures. 3. Quarterly geotechnical engineering inspections..	Health & Safety	Satisfactory	3 Moderate	D - Unlikely	9 (M)
3	Surface Water/Hydrocarbons	All Sites (TGQ once operational)	Contamination of surface water by hydrocarbons causing impact to human health or environment.	Relevant as fuel storage tanks at site. There are other sources of hydrocarbons in the workshop.	1. Surface water monitoring as required in Water Management Plan (including oil and grease) 2. Inspections 3. Ensure storage, handling and transport of dangerous goods are conducted in accordance with relevant Australian Standard 4. Identify classify, quantify & appropriately store hazardous waste 5. Implement oil and fuel spill controls 6. Ensure adequate spill kits are available on site including adequate training for effective use 7. Appropriate location of hazardous materials storage areas to prevent off-site discharges 8. Hydrocarbon washdown bay and collection sump 9. Collection through licensed contractors	Financial	Satisfactory	3 Moderate	D - Unlikely	9 (M)
4	Groundwater/Hydrocarbons	All Sites	Contamination of groundwater by hydrocarbons causing impact to human health or environment.			Financial	Satisfactory	3 Moderate	E - Rare	6 (L)
5	Land contamination	All Sites	Spills of hydrocarbons causing impacts to the land (i.e. contaminated soils).	Relevant as fuel storage tanks at site. There are other sources of hydrocarbons in the workshop.	1. Fuels stored according to HQPL bunding requirements. 2. Measures in place to ensure spills do not leave site approved development footprint i.e. diverting flow away from footprint 3. Bunding subject to regular inspection and maintenance 4. Hydrocarbon washdown bay and collection sump 5. Collection through licensed contractors 6. Spill kits available	Financial	Satisfactory	2 Minor	C - Possible	8 (M)
6	Land contamination	All Sites	Spill during delivery/fuelling process to mobile equipment and tanks.		1. Breakaway couplings installed on mobile fuel delivery vehicles. 2. Drivers stay with vehicle during refuelling 3. Emergency spill kits located on fuel delivery vehicles. 4. Spill response equipment is regularly inspected and maintained 5. Mobile refuelling takes place in the pit 6. Drivers trained in spill response procedures. 7. Refuelling takes place in designated refuelling areas. 8. Spill Management response is activated 9. Designated material transfer points	Financial	Satisfactory	3 Moderate	C - Possible	13 (M)
7	Dust	All Sites	Dust emissions from site causing impact to human health.	Relevant as dust could still be produced at the site during operations. Note, this risk does not relate to the above criteria, it relates to the triggered of a PIRMP incident.	1. Complete monitoring & assess results/ program 2. Water carts/spraying for dust suppression 3. Minimise disturbed areas 4. Stop dust generating activities as necessary 5. Restrict works during periods of high wind 6. Dust minimisation training 7. Maintenance of dust control equipment 8. Complaints hotline 9. Communicate construction activities to neighbours plus potential for dust	Health & Safety	Satisfactory	2 Minor	D - Unlikely	5 (L)

Risk Ref. Number	Risk Category	Relevant Sites	Potential Hazard	Relevance to Project	Existing Controls	Risk Type	Risk Control Effectiveness	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
8	Blasting	All Sites	Release of dry powder and emissions from blasting events i.e.. fumes.	Blasting occurring as part of operations	<ol style="list-style-type: none"> Blast Management Plan implementation Detailed design & predictive modelling for each blast Monitoring of each blast with feedback to model, including fume inspections. Establish blast monitoring reference locations Notify sensitive receivers in accordance with site blasting register Establish & advertise blasting hotline Drill accuracy is monitored via bore tracking procedures Establish site blasting procedures & train personnel Clear site to safe areas prior to blasts Clear off-site areas prior to blasts 	Health & Safety	Satisfactory	2 Minor	E - Rare	3 (L)
9	Blasting	All Sites	Vibration/air blast damage to off-site structures (i.e. nearby residents).			Image & Reputation	Satisfactory	2 Minor	D - Unlikely	5 (L)
10	Ecology	All Sites	Damage to flora or fauna (i.e. Clearing outside approved disturbance boundary, which triggers a PIRMP incident due to damage and possible habitat destruction).	Biodiversity offset areas are under KHRQ Development Consent and KEQ Project Approval.	<ol style="list-style-type: none"> Signage as per KHRQ Flora & Fauna Management Plan and KEQ Landscape & Rehabilitation Management Plan. Monitor & report Suitable training regarding flora protection Implement bushfire hazard reduction tasks Removal of feral animals from sensitive areas Noxious weed control in sensitive areas As per BioMP Offset MP for KEQ As per Flora and Fauna MP for KQ Fencing, flagging and marking controls 	Environment	Satisfactory	3 Moderate	C - Possible	13 (M)
11	Natural Disasters	All Sites	Events on site including bushfires, or major storms can exacerbate risks, potentially leading to the spread of pollutants from the site.	Events could occur on-site that are not covered in the water controls	<ol style="list-style-type: none"> Management plans i.e., Bushfire Management Plan. Bushfire tracks upkeep on site for access Emergency Response Equipment on site - Mapped and distributed to staff Emergency Response Infrastructure 	Environment	Satisfactory	2 Minor	E - Rare	3 (L)