



APPROVALS - SUSTAINABILITY - COMPLIANCE

ENVIRONMENTAL MANAGEMENT PLAN ANNUAL AUDIT REPORT

**Holcim Pakenham Quarry,
95 Mt Shamrock Road, Pakenham, VIC**

March 2024



for

Holcim (Australia) Pty Ltd

ACKNOWLEDGEMENTS

EnviroRisk would like to thank all Holcim Pakenham Quarry personnel involved in the EMP compliance audit. The audit process was well represented. Particular thanks go to Mr Leigh Elliott (Quarry Manager), and Mr Nathan Thomas (Operations Manager) who attended audit briefing meetings and/or accompanied the auditors for the site audit period.

AUDITING METHOD

This audit report is based on a representative sample of systems and information using the '*evidence based approach*' as provided for in AS/NZS ISO 19011:2019 *Guidelines for auditing management systems*. This approach was adopted to verify that environmental risks are being systematically managed in accordance with the audit criteria as specified in the audit scope section of this report.

Information presented within the report relies on:


- the completeness and accuracy of information provided by those personnel available for interview (after reasonable professional interrogation of the accuracy of such information);
- the condition of the site as observed during the day(s) of the site inspection; and
- the completeness and accuracy of records, monitoring data and previous reports that were within the system or made available to support audit enquiries.

It is emphasised that this audit is a 'snapshot in time' and environmental conditions, business operations and/or management practices may vary at times following the audit period.

The detail provided within the audit report largely reports by exception; discussing areas identified for improvement far more than when commendable practices were observed and/or verified. This approach is considered to provide a more concise report, with a focus on continuous improvement.

The audit report is intended for those named on the distribution list. The audit report should only be reproduced and distributed in full.

GENERAL INFORMATION

AUDIT ITEM:		DETAILS
AUDIT DETAILS	Audit No:	rHOL_PAK_EMP Audit_240301_R0
	Audit Title:	Environmental Management Plan Annual Audit Report, Holcim Pakenham Quarry
	Site Office:	95 Mt Shamrock Rd, Pakenham VIC
	Site/ Dept. Manager:	Leigh Elliott – Quarry Manager, Holcim Pakenham
	Date Audit Completed:	28 February – 1 March 2024
AUDIT TEAM	Lead Auditor:	Stephen Jenkins, Director, EnviroRisk Management Certified Environmental Practitioner
	Signature:	
	Lead Auditor:	Simon Leverton, Senior Consultant, EnviroRisk Management Certified Environmental Practitioner
	Signature:	
	Auditor:	Lok Nethercott, Regional Manager, EnviroRisk Management Certified Environmental Practitioner
	Signed:	
CLIENT REPRESENTATIVE	Name:	Leigh Elliott – Quarry Manager, Holcim Pakenham
AUDIT PERSONNEL	Interviewees/ Attendees:	Leigh Elliott – Quarry Manager, Holcim Pakenham Nathan Thomas – Operations Manager, Holcim Pakenham Stephen Fry – Quarry Pit Supervisor, Holcim Pakenham James Davies – Plant Operator
REPORT DISTRIBUTION	Names:	Leigh Elliott – Quarry Manager, Holcim Pakenham
		Stephen Jenkins – EnviroRisk Management Pty Ltd (Master Copy)

DOCUMENT REVISION HISTORY

REVISION NO.	SUMMARY OF AMENDMENTS	REVIEWED BY	ISSUED BY	ISSUE DATE
R0		S Leverton	S Leverton S Jenkins	26 Mar 2024

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EXECUTIVE SUMMARY

EnviroRisk Management Pty Ltd (EnviroRisk) was engaged by Holcim (Australia) Pty Ltd (Holcim) to undertake an annual independent audit of the Environmental Management Plan (EMP) for the Holcim Pakenham quarry located at 95 Mt Shamrock Road, Pakenham VIC.

The quarry has been in operation since 1974. In 2008 approval for the extension of quarrying works was granted by the Victorian Minister for Planning subject to the quarry being managed in accordance with an EMP that covers all the environmental management requirements specified by the applicable planning, extractive industry and environmental regulators. The EMP was prepared and approved by the regulators in January 2008. It has since been reviewed and revised twice, with the latest and current version 3 (dated 3 July 2021) being approved by the Cardinia Shire Council and coming into effect on 24 August 2022.

The Audit involved a detailed evaluation of compliance by Holcim with the requirements of the 'Holcim Pakenham Quarry – Environmental Management Plan, revision 3 (dated 3 July 2021)' and approved by the Cardina Shire Council and coming into effect on 24 August 2022.

The audit comprised the conducting of interviews with a range of Holcim personnel, examination of documentation and records (audit evidence), a guided inspection of the quarry site and surrounding area, and the completion of a detailed protocol which lists all commitments and obligations contained within the EMP. Photographs were taken to illustrate items raised for attention and to support audit determinations and are included in this report.

This report describes the outcome of the independent audit. From examining evidence provided to EnviroRisk during the audit, discussions with site personnel, and inspections in and around the quarry area and surroundings, it is concluded that the EMP and related management documents are being substantially and effectively implemented.

Table E1 provides a summary of several commendable practices being demonstrated at the site and two (1) specific EMP nonconformities were identified during the audit.

Table E2 provides an overview of compliance against the objectives and targets set out in Parts B and C of the EMP, together with the outcomes from the previous three (3) audits. For the audit period of 1 March 2023 to the 29 February 2024 all the objectives and targets specified in the EMP were met except for the water management target.

Table E3 provides further recommendations for addressing the nonconformities and implementing opportunities for improvement identified during the audit.

TABLE E1: SUMMARY OF COMMENDABLE PRACTICES AND NONCONFORMITIES

AUDIT ITEM	DETAILS
Commendable Items:	<p>The following commendable practices and outcomes were noted:</p> <ul style="list-style-type: none"> ▪ Excellent management, engagement and awareness of environmental issues and risks at the quarry across all levels (i.e. Quarry Mgr, Quarry Supervisor, Plant operator) ▪ No environmentally related and justified complaints were received/recorded during the audit period; ▪ Recommendations from the previous audits have been actioned, or appropriately deferred for future action as required; ▪ Rehabilitation areas within the quarry, on the outside western and southern slopes, and in the Net Gain Offset areas are progressing well. Vegetation management has responded and adapted appropriately to site conditions through species selection (use of more dry resistant species) and planting strategy (timing, spacing on slope); ▪ Holcim continues to engage extensively and positively with external stakeholders (as represented in the ERC), including residential neighbours and internally through SIT meetings, Toolbox meetings etc; ▪ Effective training in place for employees and contractors (spill response, environmental awareness, 2024 start up) ▪ Commendable response to incidents (oil spill at crusher 4 was a good example with appropriate responses, water sampling, reporting and communications through toolbox meetings etc and follow up spill response training) ▪ Excellent monitoring programs/inspections and record keeping; ▪ Waste management is effective through good segregation practices; ▪ Chemical storage practices were of a good standard; ▪ Progressive replacement and update of the dust particulate monitoring equipment which showed significant 'outages' and data gaps during the audit period; ▪ Environmental quality monitoring data for dust, noise and water, blasting were substantially in compliance with respective limits, with some relatively minor exceptions. <p>As a result of the above, the objectives and targets laid out in the EMP were met for all sections except water (as per noted and reported turbidity exceedances).</p>
Non-conformities	<p>The following non-conformities were identified during the audit:</p> <ol style="list-style-type: none"> 1. EMP Section B-1 – The latest version of the Environmental Management Plan (dated 3 July 2021 and approved by the Cardinia Shire Council on 24 August 2022) needs to be updated to be in line with current legislation, particularly the Environment Protection Act 2017 and associated Environment Reference Standard 2021 which came into force in July 2021. The applicable State Environment Protection Policies referenced in the EMP have now become redundant and as such all references to the SEPP's need to be removed from the EMP and targets will need to be updated to protect environmental values as outlined in the Environment Protection Regulations and the Environment Reference Standard. 2. EMP Section B-2.4.2 – Two (2) turbidity exceedances were recorded during the audit period, the highest being approx. 95 NTU (Licence Limit 30). Exceedances were associated with significant rainfall events. All were reported to EPA with explanation of likely cause. The site is considering opportunity to install a larger pump in Donnazan's dam to allow for larger recirculation of water up to quarry pit and allow for larger freeboard availability in Donnazan's dam to prepare for significant rain events. 3. EPA Operating licence OL544 - In relation licence conditions OL_G5, Holcim management have advised that they have taken the position that the EMP issued in accordance with the aspects and impacts identified under the Environment Impact Statement (the 3 volume document) meets the intent of condition OL_G5 and as such have determined that they meet this licence condition.

However, given the current version of the EMP does not reflect current legislation and it is not clear that it describes how Holcim will continue to eliminate and minimise the risks so far as reasonably practicable, it is recommended that Holcim update the EMP to meet the current guidelines for the development of a Risk Management and Monitoring Program (RMMP).

Holcim management have also advised that they have taken the position that condition OL_G7 is triggered once they commence (or intend to commence) a decommissioning process and in the case of the Pakenham quarry that it would be linked to a quarry closure plan. They have taken the position that at this point in time condition OL_G7 has not been triggered.

However condition OL_G7 asks for a decommissioning plan to be developed and maintained in accordance with the current decommissioning guidelines and this requirement is not linked to commencing decommissioning activities. While it is acknowledged that the Pakenham quarry has prepared a quarry rehabilitation plan, it is recommended that Holcim confirm with the EPA if this rehabilitation plan meets the specific guidelines for development of a decommissioning plan, and if not update the rehabilitation plan or develop a separate decommissioning plan that meets the current decommissioning guidelines.

TABLE E2: OVERVIEW OF COMPLIANCE AGAINST THE OBJECTIVES AND TARGETS SET OUT IN PARTS B AND C OF THE EMP

EMP SECTION	2020/21		2021/22		2022/23		2023/24	
	OBJECTIVE	TARGET	OBJECTIVE	TARGET	OBJECTIVE	TARGET	OBJECTIVE	TARGET
Air Quality	Achieved	Partially Met	Achieved	Met	Achieved	Met	Achieved	Met
Noise	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Blasting	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Surf. Water, Drainage, and Groundwater	Achieved	Not met	Achieved	Met	Achieved	Not Met	Not Achieved	Not Met
Slope Stability	Achieved	Achieved	Achieved	Met	Achieved	Met	Achieved	Met
Greenhouse Gas Emissions	Achieved	Not met	Achieved	Not met	Achieved	Met	Achieved	Met
Traffic Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Net Gain	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Cultural Heritage	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Fire Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Water Conservation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Waste Management	Achieved	Met	Achieved	Met	Achieved	Under Revision	Achieved	Met
Housekeeping/ Prev. Maint	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Storage & Handling	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Donazzan's Dam Integrity	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Rehabilitation & Vegetation	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met

N/A – no longer applicable

TABLE E3: TABLE OF RECOMMENDATIONS AND OPPORTUNITIES FOR IMPROVEMENT

EMP SECTION	COMPLY	RECOMMENDATION / OPPORTUNITY FOR IMPROVEMENT
8.3 EMP Variation	C-OFI	Update the EMP review procedure to include a mechanism to allow for updates of procedures/processes identified as a result of new legislation or identified risks within the annual LRMP review and the 5 year EMP review period. These could be presented to the ERC as there is regulatory representation at those meetings and then attached as appendices to the current EMP and LRMP, to be included in future update of the EMP and LRMP.
9 Compliance Planner	C-OFI	Update the compliance planner to change the EPA licence number and include conditions OL_G5 and OL_G7 of current EPA operating licence referring to the need for a RMMP and Decommissioning Plan respectively.
B-2.1.1 Air Quality	C-OFI	Include a summary of PM10 monitoring results in the quarterly update provided to the ERC.
B-2.1.2 Air Quality	C-OFI	PM10 monitoring targets and equipment need to be updated to meet the standard in the Environment Reference Standard 2021 of 50 ug/m3 1 day average. Suggest engaging an air specialist to assist in determining a real time action threshold to assist with compliance on this limit.
B-2.1.3 Air Quality	C-OFI	Set up of instantaneous PM10 data notification in the plant operators office to allow for immediate response to any dust exceedance at the boundary.
B-2.1.4 Air Quality	C-OFI	Advise Blue Atmosphere to update monitoring location identifiers in the figure in their reports to align with those in Figure 1, Appendix 11 of the EMP.
B-1 Operations and Impacts	mnc	EMP needs to be updated to be in line with EP Act 2017 (came into force in July 2021) and the Environment Reference Standard 2021 as SEPPs are now redundant and as such some targets will need to be updated to protect environmental values.
B-2.2.3 Noise	C-OFI	Update the Noise Section of the EMP to reflect the Noise Management Plan in Appendix 11 or reference the Noise Management Plan to avoid double up of processes.
B-2.4.2 Surface Water	mnc	To assist in the avoidance of licence exceedances for surface water discharge: <ul style="list-style-type: none"> progress the feasibility investigation for the installing of the larger pump including an assessment on what impacts that would have on the integrity of Donnazan's Dam. undertake a Hydrological Assessment to better understand catchments volumes within the quarry and capacity needed to allow for capture and recycle of surface run-off in a significant rain event (i.e. 1:20 year event, 1:50 year event, 1:100 year event).
B-2.4.2 Surface Water	C-OFI	Consider adding process for the activation of pumps to manage water discharge from dams in a severe weather event to the site specific work procedure 'Management of severe weather event PAKSWP87 Rev2 Reviewed 06/10/22'.
B-2.4.3 Surface Water	C-OFI	Implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report of 23/02/24.
B-2.4.3 Surface Water	C-OFI	Progress the additional recommendations in the Hydrogeological Review of collecting continuous flow data for the springs. This data could be very valuable should the quarry extension proceed that is being investigated in the north east corner quarry
B-2.5.3 Slope Stability	C-OFI	The recommendations from the AECOM, Mt. Shamrock Quarry - Toomuc Valley Slope Inspection, letter report dated January 2024 should be implemented through the ICARE system.

B-2.5.3 Slope Stability	C-OFI	Consider including the checking and completion of records for overburden, crushed rock stockpiles in the slope stability inspection as a form already exists for recording this data.
B-2.8.3 Net Gain Management	C-OFI	Progress recommendations in 2023 Naturelinks report.
B-2.15.4 Donazzan's Dam Integrity	C-OFI	Update field measurement location at Donnazan's dam in the checklist/procedures to reflect at location at the bottom of the spillway rather than exit point of the dam.
B-2.12.2 Waste Management	C-OFI	Include appropriate waste management target(s) in the EMP after submission to ERC for comment, and Council for approval, as provided for in s.8.3 EMP Variation and Appendix 3 of the EMP, 2021.
B-2.12.3 Waste Management	C-OFI	Include reporting against quantifiable waste management targets in the ERC Quarterly Report to demonstrate improvement in waste reduction.
B-2.12.3 Waste Management	C-OFI	Update the EMP to include a form of words that best reflects a credible and effective waste minimisation and disposal strategy that aligns with the waste hierarchy and the circular economy principles of sustainable resource management.
B-2.13 Housekeeping/Prev. Maint	C-OFI	Consider consolidating housekeeping, environmental and hazard inspections sheets into one document.
LRMP s.1.2 Accompanying Drawings	C-OFI	Update the LRMP to include the amended complying plans to reflect changed thinking in relation to EVCs applicable to the quarry site and in particular the southern faces currently being rehabilitated.
LRMP s.2.2 Reporting	C-OFI	Update EMP to reflect correct reporting timing to align with LRMP or vice versa – 3 monthly to ERC, annually for rehab report and monthly for inspection checks.
LRMP s.2.4 Non-conformance & Corrective Actions	C-OFI	Continue to implement recommendations in the Mt Shamrock Rehabilitation Report 2023.
LRMP s.2.5 – Soil Testing	C-OFI	Include in the next EMP and LRMP update undertaking a preliminary site investigation at completion of works and in accordance with the National Environment Protection Measure (Assessment of Site Contamination 1999 (as amended)).
EPA License OL-G5	mnc	Given the current version of the EMP does not reflect current legislation and it is not clear that it describes how Holcim will continue to eliminate and minimise the risks so far as reasonably practicable it is recommended that Holcim update the EMP to meet the current guidelines for the development of a RMMP.
EPA License OL-G5	mnc	While it is acknowledged that the Pakenham quarry has prepared a quarry rehabilitation plan, it is recommended that Holcim confirm with the EPA if this rehabilitation plan meets the specific guidelines for development of a decommissioning plan and, if not, update the rehabilitation plan or develop a separate decommissioning plan that meets the current decommissioning guidelines.

Compliance is rated as follows:

C – Complies;

OFI – Observation; opportunity for improving the management system and/or operational controls exists.

mNC – Minor non-compliance (minor actual/potential SHE impact, may be contained within site or have limited off-site impact; documentation issue);

MNC – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);

NA – Not Auditable (see comments for the reason why)

1.0 INTRODUCTION AND BACKGROUND

The Holcim Pakenham quarry has been in operation since 1974. In 2001 an application was made for the quarrying activities to be extended. An Environmental Effect Statement (EES) was prepared and after public comment and a panel review, permission for the extension was granted by the Victorian Minister for Planning subject to the quarry being managed in accordance with an Environmental Management Plan (EMP) to cover all the environmental management requirements specified by the applicable planning, extractive industry and environmental regulators.

An EMP was prepared for Holcim (then CEMEX) by EnviroRisk Management Pty Ltd (“EnviroRisk”) and issued on 18 January 2008. The EMP has since been reviewed and revised twice, with the latest and current version 3 (dated 3 July 2021) being approved by the Cardinia Shire Council and coming into effect on 24 August 2022.

Works to extend the quarry commenced in February 2008. The aerial photographs in **Appendix 2** show the quarry prior to extension works, two years after Stage 1 of the extension commenced (i.e. 2010), and at various stages thereafter until the present (i.e. February 2024). The land forming the extension is in the south west corner of the quarry, as shown in photograph 1 in **Appendix 2**.

This report describes the outcome of the annual audit of the EMP, conducted as specified in section 8.1 of the EMP.

2.0 OBJECTIVES

The objectives of the audit are:

- to evaluate the extent of implementation of the EMP by Holcim over the audit period (1 March 2023 to 29 February 2024);
- to determine whether the limits, commitments and undertakings set out in the EMP are being complied with and implemented; and
- provide a public report on the findings to Holcim for presentation to the ERC.

3.0 SCOPE AND CRITERIA

The scope of the audit is to undertake a detailed evaluation of compliance by Holcim with the commitments and requirements set out in the ‘Holcim Pakenham Quarry – Environmental Management Plan, revision 3 (dated 3 July 2021)’ and approved by the Cardina Shire Council and coming into effect on 24 August 2022. Specifically, the scope includes an examination of:

- the actions taken in implementing the EMP;
- the compliance with prescribed limits; and
- the environmental monitoring conducted in accordance with the environmental monitoring program appended to the EMP.

In addition, the status of progress towards implementing the recommendations of previous audits was reviewed. The site component of the audit was conducted through site interviews, documentation examination and an accompanied site inspection at the quarry and its surroundings over the three day period 28 February to 1 March 2024 (inclusive). Prior to this a selection of audit evidence (in electronic format) was requested from Holcim for review by the auditors.

4.0 AUDIT TEAM

The Audit Team and their specific roles in the Audit area summarised in **Table 1**.

TABLE 1: AUDIT TEAM

MEMBER OF AUDIT TEAM	ROLE
Stephen Jenkins	<p>Project Director and Lead Auditor</p> <p>Stephen is the Director of EnviroRisk Management and an Exemplar Global-accredited Lead Environmental Auditor (EMS, Compliance, Due Diligence and Facilities and Process). He is also a Certified Environmental Practitioner, and a Victorian EPA-appointed Environmental (Industry Facility) Auditor (appointed pursuant to the Environment Protection Act, 2017).</p> <p>Stephen was formerly an operations scientist with the Victorian EPA and worked as an environmental manager with Richard Oliver Risk Managers before establishing EnviroRisk Management in 1995. Stephen developed the AuditMASTER environmental management software package based on his many years of experience conducting reviews of Environmental Management Systems. He has conducted systems/risk audits of a large variety of sites including food processing, building and construction, automotive parts manufacturers, plastics and related industries.</p> <p>Stephen's role in this project was as Audit Leader, providing expert input and direction, and quality-assuring deliverables through peer review.</p>
Simon Leverton	<p>Lead Auditor (Water and waste specialist)</p> <p>Simon is a Senior Project Manager and Exemplar Global-accredited Lead Environmental Auditor (EMS, Compliance, Site Contamination Assessment and Facility). He has over 47 years' experience as a scientist, and over 36 years working in the environment industry. He is also a Certified Environmental Practitioner. Simon has a broad range of industrial expertise in both the public and private sectors. He worked for the Victorian EPA for 6 years during which time he managed works approvals and licences for a wide range of industries in the water and wastewater sectors, and landfills. He was also extensively involved in motor vehicle policy evaluation and development, enforcement, and community consultation programs. In the early 1990's he was a senior officer with WA's Water Corporation (trade waste) and later became pollution control manager for that state's then Waterways Commission. As Principal Environmental Scientist with GHD in Perth, Simon was involved in developing environmental management plans for numerous clients. Simon has extensive environmental auditing experience over a range of industry sectors, including quarries, brickworks and other building materials industries.</p> <p>Simon's role in this project was as an additional Audit Leader, providing additional expert input and direction, and quality-assuring deliverables through peer review of the final report.</p>

Lok Nethercott Environmental Auditor

Lok is the Regional Manager for EnviroRisk Management Pty Ltd and an Exemplar Global-accredited Environmental Auditor (EMS and Compliance,). He is also a Certified Environmental Practitioner. He has twenty-three (23) years of environmental management experience; first as an Environmental Project Officer with both the Department for Environment and Heritage SA and City of Charles Sturt Council, and later as the Business Environmental Manager for a large timber manufacturing company (4 years). He has been with EnviroRisk Management for over eighteen (18) years. Lok has worked throughout Australia providing a range of services and environmental risk management strategies to assist clients fulfil their environmental, sustainability and due diligence obligations, including experience in development, implementation of Environmental Management Systems (ISO 14000 series) including sustainability indicators, environmental auditing (due diligence, risk, compliance & environmental systems) and compliance and monitoring programs

Lok undertook the site component of the audit, conducting interviews and inspections, and prepared all documentation for internal and client review, and finalised this to completion.

5.0 CRITERIA

The audit criteria are the documented obligations, commitments, requirements and undertakings by the auditee against which audit evidence is compared to determine whether they have been met.

The ‘primary’ criteria for this audit are set out in the three sections of the EMP. ‘Secondary’ criteria are the supporting documents appended to the EMP, applicable legal and other (Standards, guidelines) requirements and, more generally, industry best practice. The audit report will reference these as appropriate.

The audit protocol (**Appendix 1**) is used to record the findings against each of the primary criteria. The protocol lists each EMP commitment together with its section reference. Where management measures specified in the EMP have a timing requirement against them, this has been included in the left hand column of the protocol against each measure as appropriate.

The audit team examined Holcim’s actions in carrying out each of these commitments and recorded the evidence of these actions (either documentary, or by observation during site inspection). Auditor comments were also recorded.

For each commitment, the audit team has determined whether the actions and their timing fully satisfy the commitment and have provided a determination as outlined in **Table 2** below:

TABLE 2: COMPLIANCE DETERMINATIONS

COMPLIANCE CATEGORY	DESCRIPTION
Complies (C)	If the commitment has been met.
Opportunity for improvement (OFI)	Where an opportunity for management improvement is identified
Minor non-conformance (mnc)	If the environmental impact of the nonconformity is likely to be contained within the site, or have limited off site impact, or is a documentation issue
Major non-conformance (MNC)	For a potential or actual significant off-site impact on the environment, and/or a legal compliance issue, including non-compliance with prescribed limits in the EMP.
Not auditable (NA)	Some criteria are not auditable for various reasons, such as not being relevant at the stage of the works being examined by the audit. In this case, the criterion is designated and an explanation of the reason for this is entered in the comments section.

Photographs have been taken of various locations around the site as evidence of the measures and actions taken to implement EMP commitments, and in some cases highlight opportunities for improvement or commendable actions. These are referenced in the protocol where appropriate.

The audit included a determination of achievement against each of the objectives set out in the EMP, based on the overall findings, and also whether the specific objectives and targets for each section have been met (fully, partially or not at all). The results of this are summarised in section 7.11 and **Table 6**.

6.0 METHODOLOGY

The audit was conducted in accordance with AS/NZS ISO 19011:2019 *Guidelines for auditing management systems* and progressed through the following stages as outlined in **Table 3**:

TABLE 3: EMP AUDIT PROCESS

AUDIT STEP	AUDIT PROCESS
1. Scope confirmation and scheduling	Introductions, attain preliminary documents, devise a schedule for the audit.
2. Pre-audit information assembly and initial review	To expedite the site component of the audit documentary evidence in electronic format was provided by Holcim to the auditors for review prior to attendance on site.
3. Pre-audit Opening Meeting	Introduction of auditors to site personnel, audit process overview, project team requirements, reporting formats, schedule of de-briefings and timing for progressive phases of the compliance audit process.
4. Physical site assessment (as per Audit Schedule):	The auditor then conducted a detailed site inspection accompanied by the Quarry Manager. The inspection included the quarry and rehabilitation areas, the screening vegetation plantings on the western rim of the quarry site, equipment 'graveyards', the EPA surface water discharge sampling point, Net Gain Offset areas, northern quarry boundary and Donazzan's Dam, the maintenance area, crushing plant, cement mixing and silo, and settlement ponds. A second inspection was undertaken on the second day to view the

	<p>weather monitoring station (v1) and air quality and noise sampling and measurement location (A4, N5)</p> <p>Photographs are taken to illustrate risks. Additional document sampling to verify compliance with Holcim personnel.</p> <p>Meetings, discussions, interviews, sighting of evidence and completion of the audit protocol occurred in the site office over the three days. Holcim personnel present for some or all of this time were Nathan Thomas (Operations Manager) and Leigh Elliott (Quarry Manager), Steven – Quarry Pit Supervisor, Holcim Pakenham and James Davies – Plant Operator. The auditors also reviewed the outcomes and recommendations of the previous audit report (EnviroRisk, 2023).</p>
5. Post-audit site Closing meeting and final information request	<p>A closing meeting was held with the Quarry Manager and Operations Manager by video conferencing on day 3, 1 March at which the preliminary audit findings were presented (subject to any further audit evidence requested by the auditors for subsequent follow up and provision by the auditee).</p> <p>Request for further information not made available during the site phase (where applicable).</p> <p>Details of the audit reporting process including timeframes.</p>
6. Information review	Receipt and review of further supporting information (where requested).
7. Reporting	A detailed audit report was prepared describing the processes and findings of the audit, including recommendations for any future management actions to correct non-compliances and improve environmental management at the quarry. A draft copy of the report was provided to the auditee within three weeks of completion of the audit, for comment and corrections of any errors.

7.0 FINDINGS AND DISCUSSION

7.1 Overall

The audit has found that over the 12 month audit period the quarrying operations substantially conformed to the requirements of the EMP and its associated documents. It was also observed from the site inspection that the quarry operations appear to generally be in good order with effective management practices being implemented.

The following sub-sections provide further detail on the main findings for relevant key areas of the EMP and site activities.

7.2 Commendable Practices and Outcomes

The following commendable practices and outcomes were noted during the audit:

- Excellent management, engagement and awareness of Env issues and risks at the quarry across all levels (i.e. Quarry Mgr, Quarry Supervisor, Plant operator)
- No environmentally related and justified complaints were received/recorded;
- Recommendations from the previous audits have been actioned, or appropriately deferred for future action as required;
- Rehabilitation areas within the quarry, on the outside western and southern slopes, and in the Net Gain Offset areas are progressing well. Vegetation management has responded and adapted appropriately to site conditions through species selection (use of more dry resistant species) and planting strategy (timing, spacing on slope) (**Figure 1**);

- Holcim continues to engage extensively and positively with external stakeholders (as represented in the ERC), including residential neighbours and internally through SIT meetings, Toolbox meetings etc;
 - Effective training in place for employees and contractors (spill response, env awareness, 2024 start up)
 - Good response to incidents (oil spill at crusher 4 was a really good example with appropriate responses, water sampling, reporting and communications through toolbox meetings etc and follow up spill response training)
 - Rigorous monitoring programs/inspections and record keeping;
 - Waste management is managed well with good segregation practices (**Figure 2**);
 - Chemical, fuel and oil storage appeared to be managed well with bunding present (**Figure 3**).
 - Progressive replacement and update of the dust particulate monitoring equipment which showed significant 'outages' and data gaps during the audit period (**Figure 4**);
 - Environmental quality monitoring data for dust, noise and water, blasting were substantially in compliance with respective limits, with some relatively minor exceptions;
- As a result of the above the objectives and targets laid out in the EMP were met for all sections except water (as per noted and reported turbidity exceedances).

FIGURE 1: ESTABLISHED AND NEW PROGRESSIVE REHABILITATION AREAS ON SOUTH WESTERN FACE



FIGURE 2: EXAMPLES OF GOOD WASTE MANAGEMENT PRACTICE AND SEGREGATION



FIGURE 3: GOOD CHEMICAL, FUEL AND OIL STORAGE PRACTICES



FIGURE 4: UPDATE OF WEATHER STATION AND MONITORING EQUIPMENT



7.3 Environmental Management Plan and Associated System Procedures

The latest version of the Environmental Management Plan (dated 3 July 2021 and approved by the Cardinia Shire Council on 24 August 2022) needs to be updated to be in line with current legislation, particularly the Environment Protection Act 2017 and associated Environment Reference Standard 2021 which came into force in July 2021. The applicable State Environment Policies referenced in the EMP have now become redundant and as such all references to the SEPP's need to be removed from the EMP and targets will need to be updated to protect environmental values.

It is also recommended that the EMP be updated to reflect the correct reporting timing to align with the LRMP or vice versa – i.e. 3 monthly to ERC, annually for the rehabilitation report and monthly for inspection checks.

It is also recommended that the following system management procedures be updated:

- Including the checking and completion of records for overburden, crushed rock stockpiles in the slope stability inspection form as a form already exists for recording this data.
- Consolidate the housekeeping, environmental and hazard inspections sheets into one document to simplify recording and documentation processes.

- Update the field measurement location at Donnazan's dam in the checklist/procedures to reflect the field measurement is undertaken at bottom of the Dam spillway rather than at the exit point of the dam.

7.4 Air Quality Monitoring

Holcim experienced some technical problems with its air quality monitoring network, particularly operability problems were experienced with reactive monitors leading to PM10 data gaps in January, February, March and July 2023 at the A4 Pony Club, A3 Farmhouse and A6 Waterhouse property respectively. Quarry management have progressively replaced the continuous dust monitoring equipment (**Figure 4**) throughout the audit period resulting in accurate data now being recorded and there appeared to be no further loss of monitoring data through the remainder of the audit period.

Commendably, quarry management have now established a system whereby the quarry manager now receives real time notification should the continuous monitoring equipment record an exceedance for PM10 of $64 \mu\text{g}/\text{m}^3$. The quarry plant operator also indicated that they maintain a visual check of visible dust levels during crushing operations. Water sprays were also observed to be readily applied during the audit to assist with nuisance dust mitigation (**Figure 5**). To further assist with nuisance dust mitigation measures it is recommended that the quarry implement a system to allow for real time notification to the plant operator should any dust exceedances be recorded by the continuous monitoring equipment.

Since the EMP was updated (3 July 2021), the Environment Protection Act 2017 and associated Environment Reference Standard 2021 has come into effect (also in July 2021) with new PM10 standards to protect ambient air quality environmental values. As such it is also recommended that the PM10 monitoring targets and monitoring equipment need to be updated to meet and measure the new standard of $50 \mu\text{g}/\text{m}^3$ (1 day average) as specified in the Environment Reference Standard 2021. It is also recommended that an air specialist be engaged to assist in determining a real time threshold to be applied to the continuous monitoring program to assist with future compliance on this limit.

Air quality dust deposition data is also included in the reports to the ERC. It is also recommended that a summary of the PM10 monitoring data also be included in the reporting to the ERC.

FIGURE 5: WATER SPRAYS OPERATING ON CRUSHING PLANT



7.5 Surface Water Quality Management and Monitoring

Surface water run-off from the quarry discharges to the environment via a licenced discharge point (under EPA Operating licence #OL000000544) located at the V-notch weir downstream of Donnazan's Dam (Monitoring Station W, Figure 1, *Environmental Monitoring Stations*, EMP Appendix 11) (**Figure 6**). The surface water comprised run off from adjacent farm paddocks and vegetated land and quarry run off water discharged from Donnazan's Dam.

The quarry reported the following two (2) surface water discharge breaches of EPA Operating Licence OL000000544 during the audit period:

- 12 January 2024 – surface water discharge was tested and revealed a turbidity concentration of 94 NTU which exceeds the licence limit of 30 NTU.
- 15 January 2024 – surface water discharge was tested and revealed a turbidity concentration of 43.1 NTU which exceeds the licence limit of 30 NTU.

These breaches were associated with significant rainfall events that had occurred in the areas during the preceding days.

Both permission breaches were reported to EPA on the same day of each breach therefore, complying with EPA Operating Licence condition OL_G2 which requires the Licence holder to notify EPA immediately of any breach of a Licence condition. EPA acknowledged these reports and the actions Holcim had taken to identify their cause.

As a result of these permission breaches quarry management are investigating the feasibility of installing a larger pump in Donnazan's Dam to allow for a greater volume of water to be pumped back to the quarry pit thereby creating increased freeboard in the dam in preparation for future significant rainfall events.

As such, it is recommended that Holcim progress the feasibility investigation for the installing of the larger pump including an assessment on what impacts that would have on the integrity of Donnazan's Dam and also consider undertaking a Hydrological Assessment to better understand catchments volumes within the quarry and capacity needed to allow for

capture and recycle of surface run-off in a significant rain event (i.e. 1:20 year event, 1:50 year event, 1:100 year event).

To assist in the management of surface water run-off during significant rain events it is also recommended that Holcim include a process for the activation of pumps to manage water discharge from dams in a severe weather event to the site specific work procedure 'Management of severe weather event PAKSWP87 Rev2 Reviewed 06/10/22'.

Commendably, Holcim have engaged a specialist to undertake a Hydrogeological Review as recommended in the previous Audit. As recommended in the review, Holcim have progressed undertaking additional survey work to determine the mAHD of the springs relative to groundwater. It is recommended that Holcim progress the additional recommendations in the Hydrogeological Review of collecting continuous flow data for the springs. This data could be very valuable should the quarry extension proceed that is being investigated in the north east corner quarry.

FIGURE 6: SURFACE WATER EPA LICENCED DISCHARGE POINT



7.6 Waste Management and Monitoring

In the review and revision of the EMP and its re-issue on 24 August 2022, an error was made in the **Waste Management and Minimisation** section under **Targets** (s.2.12.2). The landfill target in the previous version of the EMP was replaced by text that came from the original EMP and was clearly not relevant to current circumstances. It is therefore recommended that Holcim seeks to amend this through the process set out in s.8.3 EMP Variation.

7.7 Landscape Rehabilitation Management

Holcim is to be commended for its progressive rehabilitation efforts and associated management program undertaken by Naturelinks. Progressive rehabilitation in many areas is now well established (**Figure 1**). It is recommended that Holcim progress the recommendations provided in the 2023 Naturelinks report.

The LRMP requires that it be reviewed annually. This review was included in the February 2024 Environment Review Committee (ERC) Meeting where Holcim discussed with the committee the need to establish a process for reviewing and documenting any ongoing

improvements to the LRMP in addition to the 5 yearly EMP review that is undertaken. Holcim committed to discussing this matter with the EMP auditor and report back to the committee in May 2024 with a suggested approach for ERC comment. Holcim also committed to bring to the May 2024 ERC meeting a few minor proposed changes to the content of the LRMP for the committee's consideration. The committee members were also encouraged to consider any other changes deemed of importance as part of the LRMP.

Holcim discussed with the EMP auditor during this audit the matter of establishing a process for reviewing and documenting any improvements to the EMP and as such it is recommended that Holcim update the EMP review procedure (refer to Appendix 3 of the EMP) to include a mechanism to allow for updates of procedures/processes identified as a result of new legislation or identified risks within the annual LRMP review and the 5 year EMP review period. These could be presented to the ERC as there is regulatory representation at those meetings and then attached as appendages to the current EMP and LRMP, and to be included in future update of the EMP and LRMP.

7.8 Compliance Evaluation

Under conditions OL_G5 and OL_G7 of EPA Operating licence OL000000544 the quarry is required to:

- OL_G5
1. You must develop a risk management and monitoring program for your activities which:
 - a) identifies all the risks of harm to human health and the environment which may arise from the activities you are engaging in at your activity site;
 - b) clearly defines your environmental performance objectives;
 - c) clearly defines your risk control performance objectives;
 - d) describes how the environmental and risk control performance objectives are being achieved;
 - e) identifies and describes how you will continue to eliminate or minimise the risks in 1(a) (above) so far as reasonably practicable (SFARP); and
 - f) describes how the information collated in compliance with this clause, is or will be disseminated, used or otherwise considered by you or any other entity.
 2. The risk management and monitoring program must be:
 - a) documented in writing;
 - b) signed by a duly authorised officer of the licensed entity; and
 - c) made available to the Authority on request.
- OL_G7
- You must:
- a) develop and maintain a decommissioning plan that is in accordance with the current decommissioning guidelines published by the Authority;
 - b) provide the decommissioning plan to the Authority upon request;
 - c) supply to the Authority an updated detailed decommissioning plan 40 business days prior to commencement of decommissioning, if you propose to divest a section of the licensed site, cease part or all of the licensed activity or

- reduce the basis upon which the licence was granted to a point where licensing is no longer required; and
- d) decommission the licensed site in accordance with the detailed decommissioning plan, to the satisfaction of the Authority and within any reasonable timeframe which may be specified by the Authority.

In relation to the above licence conditions, Holcim management have advised that they have taken the position that the EMP issued in accordance with the aspects and impacts identified under the Environment Impact Statement (the 3 volume document) meets the intent of condition OL_G5 and as such have determined that they meet this licence condition.

However, given the current version of the EMP does not reflect current legislation and it is not clear that it describes how Holcim will continue to eliminate and minimise the risks so far as reasonably practicable it is recommended that Holcim update the EMP to meet the current guidelines for the development of a RMMP¹

Holcim management have also advised that they have taken the position that condition OL_G7 is triggered once they commence (or intend to commence) a decommissioning process and in the case of the Pakenham Quarry that it would be linked to a quarry closure plan. They have taken the position that at this point in time condition OL_G7 has not been triggered.

However condition OL_G7 asks for a decommissioning plan to be developed and maintained in accordance with the current decommissioning guidelines and this requirement is not linked to commencing decommissioning activities. While it is acknowledged that the Pakenham Quarry has prepared a quarry rehabilitation plan, it is recommended that Holcim confirm with the EPA if this rehabilitation plan meets the specific guidelines for development of a decommissioning plan² and if not update the rehabilitation plan or develop a separate decommissioning plan that meets the current decommissioning guidelines.

7.9 Identified Non-Conformances

Three (3) minor nonconformities were identified and are set out in **Table 1**.

TABLE 4: SUMMARY OF IDENTIFIED NON-CONFORMANCES

EMP REF.	RATING	NONCONFORMITY
B-1		The latest version of the Environmental Management Plan (dated 3 July 2021 and approved by the Cardinia Shire Council on 24 August 2022) needs to be updated to be in line with current legislation, particularly the Environment Protection Act 2017 and associated Environment Reference Standard 2021 which came into force in July 2021. The applicable State Environment Protection Policies (SEPP) referenced in the EMP have now been revoked and as such all references to the SEPP's need to be removed from the EMP and targets will need to be updated to protect environmental values.

¹ <https://www.epa.vic.gov.au/for-business/find-a-topic/environment-protection-laws-and-regulations/implementing-the-general-environmental-duty---a-guide-for-licence-holders/risk-management-and-monitoring-program>

² (<https://www.epa.vic.gov.au/for-business/permissions/licences/operating-licences/decommissioning-guidelines>)

B-2.4.2	mnc	Two (2) turbidity exceedances were recorded during the audit period, the highest being approx. 95 NTU (Licence Limit 30). Exceedances were associated with significant rainfall events. All were reported to EPA with explanation of likely cause. The site is considering opportunity to install a larger pump in Donnazan's dam to allow for larger recirculation of water up to quarry pit and allow for larger freeboard availability in Donnazan's dam to prepare for significant rain events
EPA License OL_G5 and OL_G7	mnc	As described in section 7.8 above

7.10 Review of Previous Audit Recommendations

Table 5 provides a review on the implementation status of the recommendations to correct nonconformities identified during the 2023 EMP audit. All recommendations are in progress or have been closed out.

TABLE 5: REVIEW OF PREVIOUS AUDIT RECOMMENDATIONS

EMP REF.	RATING	NONCONFORMITY	RECOMMENDATION	STATUS (FEB 2024)
B-2.1.3	mnc	The site weather station was not functioning for extended periods during the year 2022-23.	Rectify or replace the weather monitoring equipment at the site so that it is reliably recording and logging the required data at all times.	Comply The weather station has now been replaced.
B-2.4.2	mnc	Three (3) turbidity exceedances were recorded during the audit period, the highest being approx. 80 NTU (Licence Limit 30).	Investigate and then implement effective measures to cease the discharge from the site of sediment-contaminated water that exceeds Licence limits.	In Progress The site is investigating feasibility of a larger pump in Donnazan's Dam to recirculate water back to the quarry pit to create increased freeboard in the dam and avoid sediment-contaminated discharges
B-2.4.2	mnc	The site did not report Licence breaches to EPA immediately.	Immediately report all Licence breaches to EPA.	Complete The 2 x Licence breaches during the reporting period were reported to the EPA on the day of the breach
C-LRMP, 1.2	mnc	Drawings attached to revised version of the LRMP (July 2021) have not been amended from those originally published with the ERM Landscape &	Revise the attached drawings to the LRMP so that they accurately represent the current rehabilitation program and its desired outcomes.	Complete The drawing now include a statement to 'refer to updated species list recommendations in

EMP REF.	RATING	NONCONFORMITY	RECOMMENDATION	STATUS (FEB 2024)
		Rehabilitation Report, 2005 (ref. 4).		the 2021 edition of the EMP as they have changed in line with LRMP reviews)
C-LRMP, 2.6	mnc	The LRMP is not being reviewed annually as specified in this section of the Plan.	Holcim and the relevant stakeholders should together agree on a LRMP review frequency that best meets the environmental requirements for managing rehabilitation of the site and then formulate, agree on and commit to a review and approval timeline that enables that frequency to be met.	Comply The LRMP was reviewed at the February 2024 ERC Meeting

7.11 Objectives and Targets

Table 6 summarises the outcomes of the audit with respect to the objectives and targets set out in Parts B and C of the EMP, together with those from the previous three (3) audits. For the 1 March 2023 to 29 February 2024 audit period all the objectives and targets specified in the EMP were met except for Surface Water, namely EPA Licence compliance.

It is anticipated that implementing the recommendations in this audit report should enable all objectives and targets to be met going forward.

TABLE 6: OVERVIEW OF COMPLIANCE AGAINST THE OBJECTIVES AND TARGETS SET OUT IN PARTS B AND C OF THE EMP

EMP SECTION	2020/21		2021/22		2022/23		2023/24	
	OBJECTIVE	TARGET	OBJECTIVE	TARGET	OBJECTIVE	TARGET	OBJECTIVE	TARGET
Air Quality	Achieved	Partially Met	Achieved	Met	Achieved	Met	Achieved	Met
Noise	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Blasting	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Surf. Water, Drainage, and Groundwater	Achieved	Not met	Achieved	Met	Achieved	Not Met	Not Achieved	Not Met
Slope Stability	Achieved	Achieved	Achieved	Met	Achieved	Met	Achieved	Met
Greenhouse Gas Emissions	Achieved	Not met	Achieved	Not met	Achieved	Met	Achieved	Met
Traffic Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Net Gain	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Cultural Heritage	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Fire Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Water Conservation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Waste Management	Achieved	Met	Achieved	Met	Achieved	Under Revision	Achieved	Met
Housekeeping/ Prev. Maint	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Storage & Handling	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Donazzan's Dam Integrity	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Rehabilitation & Vegetation	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met

N/A – no longer applicable

8.0 CONCLUSIONS AND RECOMMENDATIONS

From examining evidence obtained during the audit, discussions with site personnel, and inspections in and around the quarry area and surroundings, we conclude that the EMP and related management documents are being substantially and effectively implemented. All objectives and targets for environmental management were achieved except for Surface Water (EPA Licence compliance).

Table 7 summarises the recommendations for addressing the identified non-conformities and recommends opportunities for improvement moving forward.

TABLE 7: TABLE OF RECOMMENDATIONS AND OPPORTUNITIES FOR IMPROVEMENT

EMP SECTION	COMPLY	RECOMMENDATION / OPPORTUNITY FOR IMPROVEMENT
8.3 EMP Variation	C-OFI	Update the EMP review procedure to include a mechanism to allow for updates of procedures/processes identified as a result of new legislation or identified risks within the annual LRMP review and the 5 year EMP review period. These could be presented to the ERC as there is regulatory representation at those meetings and then attached as appendices to the current EMP and LRMP, and to be included in future update of the EMP and LRMP.
9 Compliance Planner	C-OFI	Update the compliance planner to change the EPA licence number and include conditions OL_G5 and OL_G7 of current EPA operating licence referring to the need for a RMMP and Decommissioning Plan respectively.
B-2.1.1 Air Quality	C-OFI	Include a summary of PM10 monitoring results in the quarterly update provided to the ERC.
B-2.1.2 Air Quality	C-OFI	PM10 monitoring targets and equipment need to be updated to meet the standard in the Environment Reference Standard 2021 of 50 ug/m3 1 day average. Suggest engaging an air specialist to assist in determining a real time action threshold to assist with compliance on this limit.
B-2.1.3 Air Quality	C-OFI	Set up of instantaneous PM10 data notification in the plant operators office to allow for immediate response to any dust exceedance at the boundary.
B-2.1.4 Air Quality	C-OFI	Advise Blue Atmosphere to update monitoring location identifiers in the figure in their reports to align with those in Figure 1, Appendix 11 of the EMP.
B-1 Operations and Impacts	mnc	EMP needs to be updated to be in line with EP Act 2017 (came into force in July 2021) and the Environment Reference Standard 2021 as SEPPs are now redundant and as such some targets will need to be updated to protect environmental values.
B-2.2.3 Noise	C-OFI	Update the Noise Section of the EMP to reflect the Noise Management Plan in Appendix 11 or reference the Noise Management Plan to avoid double up of processes.
B-2.4.2 Surface Water	mnc	To assist in the avoidance of licence exceedances for surface water discharge: <ul style="list-style-type: none"> progress the feasibility investigation for the installing of the larger pump including an assessment on what impacts that would have on the integrity of Donnazan's Dam.

		<ul style="list-style-type: none"> undertake a Hydrological Assessment to better understand catchments volumes within the quarry and capacity needed to allow for capture and recycle of surface run-off in a significant rain event (i.e. 1:20 year event, 1:50 year event, 1:100 year event).
B-2.4.2 Surface Water	C-OFI	Consider adding process for the activation of pumps to manage water discharge from dams in a severe weather event to the site specific work procedure 'Management of severe weather event PAKSWP87 Rev2 Reviewed 06/10/22'.
B-2.4.3 Surface Water	C-OFI	Implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report of 23/02/24.
B-2.4.3 Surface Water	C-OFI	Progress the additional recommendations in the Hydrogeological Review of collecting continuous flow data for the springs. This data could be very valuable should the quarry extension proceed that is being investigated in the north east corner quarry
B-2.5.3 Slope Stability	C-OFI	The recommendations from the AECOM, Mt. Shamrock Quarry - Toomuc Valley Slope Inspection, letter report dated January 2024 should be implemented through the ICARE system.
B-2.5.3 Slope Stability	C-OFI	Consider including the checking and completion of records for overburden, crushed stockpiles in the slope stability inspection as a form already exists for recording this data.
B-2.8.3 Net Gain Management	C-OFI	Progress recommendations in 2023 Naturelinks report.
B-2.15.4 Donazzan's Dam Integrity	C-OFI	Update field measurement location at Donnazan's dam in the checklist/procedures to reflect at location at the bottom of the spillway rather than exit point of the dam.
B-2.12.2 Waste Management	C-OFI	Include appropriate waste management target(s) in the EMP after submission to ERC for comment, and Council for approval, as provided for in s.8.3 EMP Variation and Appendix 3 of the EMP, 2021.
B-2.12.3 Waste Management	C-OFI	Include reporting against quantifiable waste management targets in the ERC Quarterly Report to demonstrate improvement in waste reduction.
B-2.12.3 Waste Management	C-OFI	Update the EMP to include a form of words that best reflects a credible and effective waste minimisation and disposal strategy that aligns with the waste hierarchy and the circular economy principles of sustainable resource management.
B-2.13 Housekeeping/Prev. Maint	C-OFI	Consider consolidating housekeeping, environmental and hazard inspections sheets into one document.
LRMP s.1.2 Accompanying Drawings	C-OFI	Update the LRMP to include the amended complying plans to reflect changed thinking in relation to EVCs applicable to the quarry site and in particular the southern faces currently being rehabilitated.
LRMP s.2.2 Reporting	C-OFI	Update EMP to reflect correct reporting timing to align with LRMP or vice versa – 3 monthly to ERC, annually for rehab report and monthly for inspection checks.
LRMP s.2.4 Non-conformance & Corrective Actions	C-OFI	Continue to implement recommendations in the Mt Shamrock Rehabilitation Report 2023.
LRMP	C-OFI	Include in the next EMP and LRMP update undertaking a preliminary site investigation at completion of works and in accordance with the

s.2.5 – Soil Testing		National Environment Protection Measure (Assessment of Site Contamination 1999 (as amended)).
EPA License OL-G5	mnc	Given the current version of the EMP does not reflect current legislation and it is not clear that it describes how Holcim will continue to eliminate and minimise the risks so far as reasonably practicable it is recommended that Holcim update the EMP to meet the current guidelines for the development of a RMMP.
EPA License OL-G5	mnc	While it is acknowledged that the Pakenham quarry has prepared a quarry rehabilitation plan, it is recommended that Holcim confirm with the EPA if this rehabilitation plan meets the specific guidelines for development of a decommissioning plan and, if not, update the rehabilitation plan or develop a separate decommissioning plan that meets the current decommissioning guidelines.

Compliance is rated as follows:

C – Complies;

OFI – Observation; opportunity for improving the management system and/or operational controls exists.

mNC – Minor non-compliance (minor actual/potential SHE impact, may be contained within site or have limited off-site impact; documentation issue);

MNC – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);

NA – Not Auditable (see comments for the reason why)

9.0 REFERENCES

1. EPA Victoria, Legislation, guidelines, etc (various).
2. EPA Operating Licence OL000000544
3. EnviroRisk Management Pty Ltd (2023) Environmental Management Plan Annual Audit, Pakenham Quarry, Mt Shamrock Road, Pakenham, VIC – issued 21 April 2023
4. Holcim Pakenham Quarry Environmental Management Plan, version 3, 3 July 2021 and associated documents.
5. Mt Shamrock Quarry (Pakenham) - Proposed Work Authority Extension, Landscape and Rehabilitation Report, February 2005.
6. Naturelinks Landscape Management Pty Ltd (2023) Holcim Quarry Mt Shamrock – 2023 Rehabilitation Report
7. GHD (2023) Pakenham Quarry Hydrogeological Review – 12598748, 28 June 2023
8. AECOM (2024) Letter Report – 2023 Groundwater and Spring Review, Pakenham Quarry, 23 February 2024
9. AECOM (2024) Letter Report – Mt Shamrock Quarry – Toomuc Valley Slope Inspection – January 2024
10. AS/NZS ISO14001:2016 *Environmental management systems*.
11. AS/NZS ISO19011:2019 *Guidelines for auditing management systems*.

APPENDIX 1 – AUDIT PROTOCOL

Audit Period: 1 March 2023 – 29 February 2024; Site Audit Date(s): 28 February – 1 March 2024; Auditors: Simon Leverton, Lok Nethercott (EnviroRisk Management)

EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
A	ADMINISTRATION				
2	Quarry Operations – <ul style="list-style-type: none"> Production rate Processes Hours of operation 	Holcim Quarry Manager – pers. Comm.	Approx. 1.3 million t/y production rate. Operating hours and quarry processes have remained the same with the exception of a stripping campaign undertaken during the year. No blasting occurring outside of specified hours.	C	
3	Roles & Responsibilities <ul style="list-style-type: none"> Table of R&Rs 	EMP, pp11-12. Quarry Manager - Interview Quarry Supervisor – Interview	As specified in the Table. Refers only to Holcim employees. Environmental responsibilities are shared across a range of personnel. Knowledge of specified roles and responsibilities under the EMP was demonstrated through interviews with employees	C	
4	Environmental Review Committee The ERC has been established, and will operate, under a procedure laid down by Council. Holcim will cover all the administrative costs of the ERC, including the fees of the Chairperson, and will provide secretariat services to the ERC. The ERC will monitor and review the performance of the quarry against the Permit, the Work Authority and this EMP (as varied from time to time), provide advice and facilitate community understanding of quarry operations and their management.	ERC Meeting quarterly reports 2023 (Q1, Q2 2023 and Q1 2024); ERC meeting minutes (Q1, Q2 2023); Rehabilitation Report 2023 (Naturelinks); 2023 Groundwater & Spring Review letter report AECOM; 2023 Slope Stability Inspection Report, AECOM.	Minutes accessed via <i>allpossibilities</i> website, indicating meetings cover a wide range of issues, and involve considerable technical detail when applicable. <u>Minutes:</u> 2 quarters in 2023 and available. <u>Groundwater:</u> GHD undertook a Hydrogeological Review. <u>Quarterly Reports:</u> These are comprehensive and include nonconformities and how they are dealt with, monitoring data, and rehab progress reporting.	C	
5	Training & Awareness A copy of this EMP is to be kept and displayed in the foyer of the Quarry gatehouse. The EMP will also be accessible by all Holcim-approved users on Holcim's computer intranet. <ul style="list-style-type: none"> All new and current employees will be briefed on the EMP as part of their site (re-)induction and training. All employees will receive re-induction training every year. All contractors working at the site will be briefed on the EMP as part of their site (re-induction). Employees with specific key roles/ responsibilities under the EMP will have their competency verified prior to being assigned to carry out those roles. Records of training will be maintained within the SHE system. Where no employees with suitable training are available to carry out specific key roles/ responsibilities	Training Matrix – 2 Enviro courses; EMP awareness Work; Induction booklet and Checklist sample; Procedure – sign off on completion.	The EMP is available at the Quarry office via the Quarry manager Sighted 2024 Start-up induction training that highlighted environmental issues observed in 2023 RapidInduct – inductions done through this platform (Damstra for contractors). Sighted examples of completed inductions (dated 06/11/23 and 27/01/24) Sighted a completed employee induction (dated 03/10/23) – covers a range of environmental hazards/issues that are covered under the EMP including: dust, environmental awareness, noise, spill response EMP awareness is communicated through a Work Procedure, with sign off. Toolbox talks include environmental issues and risks. Work Procedure being developed for waste management training.	C	

*Compliance ratings

C – Complies; C-OFI – Observation; opportunity for improving the management system and/or operational controls exists.

mNC – Minor non-compliance (minor actual or potential SHE impact, may be contained within site or have limited off site impact; documentation issue);

MNC – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	under this EMP, those roles/ responsibilities will be carried out by suitably qualified persons or companies contracted by Holcim for that task.				
5.1	Personnel having responsibilities for carrying out monitoring activities as specified in the monitoring program will be trained and tested for their competence to carry out such activities, and certified as such, by a specialist in the relevant field. An Appointment of Environment Training Specialists Procedure (Appendix 1) has been developed for this process and approved by Business Victoria.	EMP version 3 doc.	Bore gauging undertaken was done by following AECOM processes. Water sampling was undertaken by Senior Holcim Environment personnel	C	
6.0	Procedures have been developed for both internal (within Holcim) and external (between Holcim and external interested parties) communication and reporting. A separate procedure has been prepared to manage environmental complaints received from external parties such as members of the public and local residents.	Refer to 6.1 – 6.4 below	Refer to 6.1 – 6.4 below		
6.1	Internal Communications The SHE Guideline 2.2 Consultation sets out details of communications within Holcim on environmental issues, which for Pakenham Quarry is through the site's Safety Improvement Team (SIT). The procedure describes how meeting outcomes are minuted and the minutes distributed to other employees. At SIT meetings environmental progress and performance under the EMP will be reviewed and discussed, and actions authorised. Environmental issues will be raised with other employees at toolbox meetings which will be conducted as required. All toolbox meetings are recorded using the Attachment 2.1A - Toolbox Talk Form.	SIT minutes sighted (various from Jan – Dec 2023). Toolbox Meetings	Monthly SIT meetings (sample of minutes sighted on noticeboards at main office and plant area). Toolbox meetings, daily pre-start. SIT meetings track progress in EMP performance and implementation through audit completion, incident resolution, and compliance planner status. Toolbox meetings occur every morning – enviro issues raised as applicable. Sighted example dated 21/06/23 where reporting on response to oil leak in June 2023 was discussed Toolbox pre-start talks are logged in Toolbox book.	C	
6.2	Incidents All environmental incidents are to be reported, recorded and investigated in accordance with USHE Guideline 5.01 - 'Incident Reporting and Investigation'. The ICARE 2.0 incident database is to be used for reporting and recording details of each incident and the measures taken to resolve it. The system automatically forwards incident notifications through to management for completion. Every incident and the details surrounding it are available through ICARE 2.0 and are used by management for progress status and	Database (ICARE) summary of incidents (2023).	Two (2) turbidity incidents in Jan 2024 and the Hydraulic oil spill at crusher in June 2023 were lodged into ICARE	C	

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	review purposes, and to compare against performance targets.				
6.3	External Communications SHE Guideline 6.07 - 'Community Engagement' details how Holcim facilities are required to communicate and engage with the wider community regarding local issues. The site-specific Environmental Reporting Procedure (Appendix 2) specifies procedures for compliance reporting to the ERC and other stakeholders, and the frequency and nature of reporting of monitoring data, etc. Statutory reporting requirements such as those applying to the EPA Licence are also detailed in this procedure. This procedure also details the steps to take in notifying residents living near the quarry when quarry activities are planned which have the potential for off-site impacts.	EPA Permission Breach Notification Forms – J12/01/24, 15/01/24. . Quarterly reports – on ERC website. EMP – Appendix 2 – Env Reporting Procedure (28/11/13)	Incident Reporting – Sighted email communications of turbidity exceedances reported to EPA in January 2024 as Licence non-compliances. ERC reporting – sighted quarterly reports with updates provide on elements of the EMP. Quarterly reporting occurs prior to ERC meetings. Reports posted on website and made available to community. EPA Annual Report (PIPS) – no PIPS done in 2022 or 2023 – not required by EPA.	C	
6.4	Complaints A register of all complaints received is maintained as specified in Holcim's SHE Guideline 5.01 – Incident Reporting and Investigation. Any complaint received, or referred by a government agency, is directly and accurately recorded and managed in ICARE 2.0 which includes the provision for the information specified in this section of the EMP. A full and up-to-date copy of the Complaints Register can be generated by ICARE 2.0 and will be made available to members of the ERC upon request. A copy of all complaints received since the previous meeting of the ERC is to be provided to members of the ERC prior to each meeting of the ERC. A sign has been erected and maintained at the approach to Pakenham Quarry that clearly shows to approaching persons the following information: (as per EMP).	Sighted complaints register	Commendably, no complaints were received or recorded for the period. Sign on front gate sighted and is up-to-date.	C	
7	Records Records that are generated as part of the EMP are to be managed according to QMS Procedure PN1.1 Control of Documents. This procedure specifies the identification, storage, protection, retrieval, retention and disposal of records required as part of this EMP.	Records sighted during this audit.	Records (paper and electronic) are well maintained and complete and readily available upon request.	C	
8.0	EMP Audit EMP to be audited annually.	Minutes of ERC meeting.	Holcim advised ERC of 2024 audit beforehand and given opportunity for input, and that they could contact auditor directly if desired. No contact with the Auditor was made.	C	
8.1	Procedure and Personnel Certification		Holcim advises no change in specialists conducting monitoring.	C	

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	All monitoring procedures that form parts of this EMP have been certified by an expert in the relevant field as being appropriate (see also 5.1 – Appointment of Specialist Consultants). Personnel conducting monitoring measurements and inspections have been certified by a specialist in the relevant field as being competent (see also Appendix 1 – Appointment of Environment Training Specialists Procedure).		Site personnel followed AECOM process for groundwater dipping. Water sampling was undertaken by Senior Holcim Environment personnel.		
8.2	EMP Review Every 5 years.		Version 3 of EMP was issued on 3 July 2021 and approved by the Cardina Shire Council on 24 August 2022. Next Audit Review is due in 2026.	C	
8.3	EMP Variation The EMP may be varied from time to time as changing circumstances require. All variations to the EMP must receive the written consent of the responsible authority. EMP variation will be conducted in accordance with the quarry's EMP Review Procedure .		As this review did not identify and amend references to now-revoked EPA legal instruments (SEPPs), and contained some other errors, some additional amendments should be considered for approval prior to the 5 yearly review.	C-OFI	Update the EMP review Procedure to include a mechanism to allow for updates of procedures/processes identified as a result of new legislation or identified risks within the annual LRMP review and the 5 year EMP review period. These could be presented to the ERC as there is regulatory representation at those meetings and then attached as appendices to the current EMP, to be included in future update of the EMP.
9	Compliance Planner An Environmental Compliance Planner is prepared for the site each year and details the activities to be carried out on a monthly basis over the course of the specified 12 month period. This planner ensures that all environmental compliance obligations are met. Each activity in the planner is signed off upon completion, and the matrix is reviewed and if necessary revised if compliance obligations change during the 12 month period.	Compliance Planner 2023	Sighted Compliance planner for 2023	C-OFI	Update the compliance planner to change the EPA licence number and include conditions OL_G5 and OL_G7 of current EPA operating licence referring to the need for a RMMP and Decommissioning Plan respectively.
B	OPERATIONAL MANAGEMENT AND MONITORING				
1	Operations & Impacts All significant environmental hazards and incidents are documented and recorded within the ICARE 2.0 electronic database. The hazards associated with each operation and activity carried out at the quarry, together with the corresponding actual or potential environmental impact(s) for each of the hazards are also available for viewing by all authorised personnel. SHE standard control procedures are generic and apply	Refer to evidence and comments below	Holcim advises no significant change in quarry operations since last audit, other than a topsoil stripping program to move topsoil from the NW face to the SW face for use in progressive rehabilitation.	mnc	EMP needs to be updated to be in line with EP Act 2017 (came into force in July 2021) and the Environment Reference Standard 2021 as SEPPs are now revoked and as such some targets will need to be updated to protect environmental values.


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	to all Holcim aggregates site, whilst the site specific controls apply to Pakenham Quarry alone.				
2.1	AIR QUALITY				
2.1.1	Objective To prevent dust emissions from the Pakenham Quarry operation from causing a nuisance at residences or sensitive sites within the surrounding area. To ensure that dust levels do not adversely impact on the health and amenity of persons in the surrounding area.	No complaints. No evidence to the contrary re health and amenity.	Objectives have been fully achieved. No nuisance or dis-amenity likely to have been caused.	C-OFI	Include a summary of PM10 monitoring results in the quarterly update provided to the ERC.
2.1.2	Targets 100% Compliance with Permit requirements , namely the following levels to be achieved at any residence or other sensitive site: PM ₁₀ no greater than 64 µg/m ³ (1-hour average) Dust deposition no greater than 4g/m ² /month (no more than 2g/m ² /month greater than background) ¹ No (0) justified complaints from sensitive receptors.	Blue Atmosphere - monthly AQM reports (Jan-Dec 2023)	Targets have been met but need to be updated to meet the Environment Reference Standard 2021 Reactive Monitoring – no quarry-triggered exceedances were recorded and conveyed to QM, however as detailed in this section below there were some data gaps due to malfunctioning equipment. Deposition – no quarry-triggered exceedances were recorded for the data obtained. No justified complaints received.	C-OFI	PM10 monitoring targets and equipment need to be updated to meet the standard in the Environment Reference Standard 2021 of 50 ug/m3 1 day average. Suggest engaging an air specialist to assist in determining a real time limit to assist with compliance on this issue.
2.1.3	Management Measures - Actions Dust emissions from unpaved surfaces are to be controlled using the following measures: Wet suppression - all dust generating areas such as site roads will be watered, as required, to suppress dust during operation.	Observation – truck observed in action.	Sighted use of water cart during quarry operations (Photo 1). PHOTO 1: WATER CART IN USE 	C	
As required	Water used for dust control may be dosed where appropriate with dust control additives to enhance stabilisation and reduce water use.	Pers. comm. – L Elliott (QM)	Holcim advises no dosage of additives is used.	NA	

¹ Whilst **total** dust deposited exceeded the criteria on occasion the ash content data (which better characterises quarry dust being mineral in nature) complied in all cases.

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As necessary	Relevant operations will be suspended if adequate water cannot be applied for dust control.	Observation Plant Operator - Interview	<p>Holcim advises that water for dust suppression is readily available at the site. Sighted water sprays being used on the dust extraction/collector on the primary crusher (Photo 2). The Plant operator also undertakes weather checks, visual inspection and uses cameras in operators office to monitor nuisance dust.</p> <p>There was visibly significant process dust observed during the audit from the conveyors on the tertiary plant (Photo 3).</p> <p>PHOTO 2: WATER SPRAYS IN USE ON CRUSHER PLANT</p>  <p>PHOTO 3: FUGITIVE DUST VISIBLE FROM QUARRY PLANT</p> 	C-OFI	Set up of instantaneous PM10 data notification in plant operators office to allow for immediate response to any dust exceedance at the boundary.


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During clearing	Revegetation of exposed surfaces, including the following measures:	Observation; photographs 2023 Holcim Mt Shamrock Rehabilitation Report	See LRMP (Appendix 6) Sighted results of topsoil stripping from the NW face to the SW face ready for next stage of progressive rehabilitation (Photo 4)	C	
All times	▪ Vegetation and topsoil removal will be limited to the smallest practicable area and revegetated as soon as possible following clearance;		PHOTO 4: TOPSOIL PLACEMENT (BACKGROUND) READY FOR NEXT STAGE OF PROGRESSIVE REHABILITATION		
All times	▪ Soil stockpiles will be allowed to self-seed when left for extended periods of time;				
LRMP	▪ The extent of areas prone to erosion will be restricted wherever possible;		Windrow of topsoil along rim of quarry. Vegetated naturally.		
As required	▪ Exposed surfaces will be rehabilitated in a timely manner in accordance with the Landscape Rehabilitation and Management Plan (LRMP). ▪ Where revegetation or minimal land exposure is limited by procedural requirements, chemical (dust) suppression methods may be used.		Yes, to the extent practicable.		
			Yes, rehabilitation progressing well (see further discussion in Section C below). The 1.1 ha size was direct seeded with native grass mix	C	
			No chemical dust suppression methods used or deemed necessary.	C	
As necessary	On days of unfavourable conditions, a review of onsite practices will be undertaken to identify actions that can mitigate dust generation.	L Elliott, pers. comm.	See Dust Management procedure. Holcim advises fixed sprinklers at stockpiles and water cart deployed during unfavourable conditions. Also monitoring of weather forecast for dry and windy conditions with visual inspection of plant by the operator and via camera.	C-OFI	Refer to recommendation above
As necessary	Unpaved roadways will be watered on a needs basis during load and haul activities to minimise dust from vehicle movement.	Observation; photographs	Haul roads mostly observed to be well watered with minimal dust from unpaved surfaces.	C	


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All times	When moving stock, load sizes will be managed to avoid spillages.	Observation	Overfilling reportedly avoided to minimise loss of product. No spillages were observed.	C	
All times	Speed limits will be defined and communicated to all machinery operators. Where necessary speed limits will be enforced by quarry management.	Observation Induction Records	Speed limits are specified in the site induction. Sighted Speed Limit Signs on site and in the Traffic Management Plan. No obvious speeding vehicles were observed during the audit. Holcim advises some quarry vehicles have speed detectors that can alarm when limit is exceeded. Reportedly there have been no instances of speeding. Sighted induction records for truck drivers that define the speed limits (dated	C	
As necessary	Paved/sealed roadways within the quarry will be maintained in a clean state to minimise dust from vehicle movement.	Sweeper invoices – sample sighted.	Street sweeper reportedly comes to site weekly on a Wednesday afternoon – sealed surfaces swept only (inside quarry and down Mt Shamrock Rd to corner). Sighted the street sweeper (Aligned Asset Services) being used during the audit.	C	
All times	All road registered vehicles that cart quarried materials shall be covered by suitable tarpaulins or enclosed blinds prior to leaving the quarry and entering public roadways.	Observation; Quarterly Report to ERC (tarping checks)	Periodic checks are made of vehicles.	C	
All times	All road registered vehicles delivering quarry products or additives to or from the site, will pass through the wheel wash facility prior to leaving the quarry and entering public roadways.	Observation	Wheel wash was observed to be in operation during the audit (Photo 5). PHOTO 5: WHEEL WASH IN USE 	C	
As necessary	Roadways immediately beyond the site entrance will be regularly inspected and swept to prevent the build-up of material.	As above. Photograph.	Mt Shamrock road appeared to be clear of dirt and quarry material.	C	
All times	Travel distance will be minimised through appropriate site layout and design.	Observation; photographs	Land bridge in quarry pit constructed to reduce haul distance by 1km per truck movement (roughly 50%).	C	
All times	Vehicle movements will be restricted to defined areas.	Traffic Management Plan (TMP) August 2022.	Traffic management plan on office wall.	C	


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All times	Speed limits will be defined and communicated to all vehicle drivers. Where necessary speed limits will be enforced by quarry management.	Signs in place; TMP Aug 2022	30kph (stockpile area) and 40kph on haul roads. 30kph in defined areas. As above, no speeding was apparent, or has been identified by quarry management. Truck drivers advised of speed limits in inductions	C	
As required	Dust emissions from stockpiles will be mitigated where required to ensure targets are met by: <ul style="list-style-type: none"> Wet suppression using sprinklers; Covered storage of fine material; Limiting the height and slope of the stockpiles; Limiting drop heights from conveyors; and Use of wind breaks. 	Observation; photographs	Water truck used on stockpiles, fixed sprinklers installed. Dust is generated at the crushing plant, and when trucks are loaded from stockpiles, however suppression measures (i.e. water sprays on crushing plant, water rings on screenhouse silo) are in place to reduce emissions.	C	
All times	Dust emissions from conveyors will be minimised by: <ul style="list-style-type: none"> Minimising drop heights; and Appropriate design of hopper load systems to ensure a good fit with trucks, and use of appropriate enclosures for hoppers. 	Observation; Monthly sprinkler inspection records (sample); Weekly Running Inspections – sample sighted.	Monthly inspections of sprinklers conducted. Weekly running inspection of primary-secondary crusher plant includes spray function. Auditor attended at control room and discussed the issue with controller. Dust generation is visualised on screens and sprays activated when dust is excessive. Crushing and transfer activities are closely monitored at all times.	C	Refer to above recommendation on tertiary crusher conveyor.
All times	Dust emissions during material handling will be minimised by: <ul style="list-style-type: none"> Minimising drop heights; Regularly cleaning up any spillages; and Appropriate design of hopper load systems to ensure a good fit with trucks, and use of appropriate enclosures for hoppers. 	Observations; photographs.	<p>Loading observed – minimal dust emissions occurred (Photo 6).</p> <p>PHOTO 6: LOADING WITH MINIMAL DUST DUE TO USE OF RING SPRAYS</p> 	C	
All inductions	All site personnel will be instructed to immediately report situations resulting in elevated dust emissions to the manager (or their supervisor).	Dust Management procedure; induction attendance (sample sighted).	Any situations identified are raised at Toolbox meetings	C	
All times	Monthly monitoring of dust deposition.	See above	No exceedances - in cases where total dust deposited exceeded the criteria the mineral component (ash) was always found to comply.	C	
All times	Records of wind speed and direction will be stored on or off site for a period of 12 months. If the records are stored off site, the data must be readily available to the	Blue Atmosphere – records data for summary in AQ reports.	Wind speed and direction sighted on share site – real time. Weather data including wind rose data is also include in the monthly PM10 reports provided by Blue Atmosphere.	C	

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	site for analysis by the site personnel or their representatives in the case of complaints and to assist in interpreting dust monitoring data.				
All times	Dust emissions and potential dust generating activities and areas will be monitored visually during quarrying activities.	Monthly site inspections, and water spray inspections 2023 (sample sighted)	Monthly site checks are conducted to monitor for a range of issues including dust. No excessive dust related issues were noted during these checks. Sighted monthly water spray inspections and where there was an issue with one of the water sprays also sighted work order raise (#10104214) to address the issue.	C	
As required	Analysis and reporting of dust samples for compliance will be undertaken by an experienced entity independent of the operator.	Blue Atmosphere summary reports for 2023 sighted; examples of ALS reports sighted (2023).	ALS does analysis of deposition samples, and Blue Atmosphere (BA) prepares reports (both deposition and reactive monitoring). Operability problems were experienced with reactive monitors leading to data gaps in January, February, March and July 2023 at the A4 Pony Club, A3 Farmhouse and A6 Waterhouse property respectively. The site has progressively replaced air monitors with new machines.	C	
All times	Community complaints will be monitored during works to assess the operations against objectives and targets.		Holcim advises that, commendably, no air related complaints have been received.	C	
Monthly	All data is reviewed by an external consultant. In the event of any exceedances the site is notified immediately and relevant data is forwarded to the Quarry Manager.	Blue Atmosphere monthly reports – Jan-Dec 2023	No exceedances reported that were verified as attributable to site activities. For deposition monitoring, in cases where total dust deposited exceeded the criteria the mineral component (ash) was always found to comply. For reactive monitoring, any exceedance of the 80% trigger value was correlated with wind conditions. In all cases the winds prevailing at the time made it unlikely that the site was the source of the exceedance.	C	
All times	One (1) hourly average PM ₁₀ data will be provided to the Pit Manager's office from the 'reactive monitoring stations'.	As above.	One exceedance was reported, however upon further investigation (April 2023) was found to be associated with farmer moving equipment and or cattle in paddock near the monitoring station. Holcim personnel now have access to real time reactive monitoring data through a web share site. Procedure requires action when 80% level is exceeded.	C	
All times	All complaints are to be recorded in the ICARE 2.0 electronic database.	ICARE records	See above in Section A. No dust complaints received.	C	
All times	All communications are to be undertaken as per the SHE Communication Procedure.	ERC minutes; Quarterly Reports to ERC		C	
As required	Monitoring data are to be provided to ERC as per the Environmental Reporting Procedure.	Quarterly reports to ERC (from all possibilities website).	Quarterly reports were provided to ERC.	C	
All times	Dust generating activities will be controlled by watering or other means to achieve compliance targets based on reactive monitoring data, visual observation or staff feedback.	Observation. Monitoring data as noted above.	As described above.	C	
As required	If necessary, dust generating activities will cease until corrective actions result in achievement of targets, or wind conditions are such that targets are achieved.		None reported.	NA	
All times	The site Incident Management procedure will be followed to rectify all reported dust incidents.		See SHE Guideline 5.01 – Incident Reporting, Recording & Investigation Exceedances are recorded as incidents. No dust incidents were recorded during the audit period (where attributable to site).	C	

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2.1.4	Monitoring Schedule <ul style="list-style-type: none"> Monthly deposition monitoring 4x reactive dust monitors – limit is PM₁₀ (1 hour ave.) of 80 g/m³ 	Blue Atmosphere – Reports Jan-Dec 2023; ALS lab reports, dated Feb 2021-Jan 2023; Summary Table of Results.	Monitoring is conducted as per the schedule in Appendix 11. No site-attributable exceedances reported. It was noted that the monitoring locations in the BA reports are incorrectly labelled on aerial plan (refer to Fig 1, Appendix 11 for correct labels).	C-OFI	Advise Blue Atmosphere to update monitoring location identifiers in the figure in their reports to align with those in Figure 1, Appendix 11 of the EMP.
2.2	NOISE				
2.2.1	Objective To prevent noise from the Pakenham Quarry causing nuisance/annoyance to persons at noise sensitive sites in the surrounding area.	No complaints of excessive noise. Monitoring data summary (spreadsheet).	Objective achieved.	C	
2.2.2	Targets Compliance with the noise restrictions specified in the Permit, namely noise emanating from operations on the site, other than noise associated with blasting activities, must not exceed 45dB(A) L _{Aeq} measured at the nearest sensitive site outside Holcim site boundary. Noise emanating from works associated with the construction of noise attenuation mounds is exempt from this limit except that it must not exceed 68dB(A) L _{Aeq} at any time.	Monitoring data summary (spreadsheet).	Target met. Sighted 2023 summary of noise monitoring at and no exceedances were recorded.	C	
2.2.3	Management Measures				
As required	Extra acoustic measures will be implemented when excavation activities occur within 10m (vertical) of the quarry rim, e.g. bunding along the perimeter of the works area.		<i>See Noise Management Plan (Appendix 7)</i> Holcim advises not required – no exceedances measured.	C-OFI	Update the Noise Section of the EMP to reflect the Noise Management Plan in Appendix 11 or just reference the Noise Management Plan to avoid double up of processes
	Regular preventative maintenance (PM) is performed on mobile equipment to reduce unnecessary vibrations and rattles.	PM Reports – sample sighted.	Mobile plant serviced based on OEM frequency. Sighted PM Scheule for dust extractors, silos, sprays, water cart and cement silo	C	
During works	Monitoring of community complaints will be undertaken during the extraction works to assess achievement of the objectives and targets, as required.		<i>See Environmental Complaints Register in ICARE 2.0</i> No complaints received.	C	
As per Schedule	Monitoring of noise at noise sensitive locations will be undertaken as per the Monitoring Schedule (EMP s.2.2.4).	Noise Monitoring field notes and monitoring records, 2023(sample sighted).	Sighted noise monitoring results spreadsheet for locations N1 – N7 2023. All locations comply.	C	
Monthly	Monthly Housekeeping inspections will be carried out to assess noise conditions and the effectiveness of preventative measures.	Monthly inspection records – sample sighted.	Sighted General Hazard and Housekeeping Inspection Check – Aggregates – Workshop (dated 16/01/23, 17/04/23). A boundary noise subjective check is made as part of these, and noticeable sources noted for further investigation. None were reported during the audit period.	C	
As required	All complaints are to be recorded in ICARE 2.0.		None recorded.	NA	
As required	All internal communication to be undertaken as per the USHE Guideline 1.03 – Communication, consultation and	SIT meeting minutes sighted (sample Jan, Mar, May, July, Aug, Sept 2023).	EMP compliance is a regular agenda item in the monthly SIT meetings.	C	

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	Engagement. Monitoring results will be kept in the office of the QM and be made available for inspection at reasonable notice during normal working hours.	Data as per above. Sample sighted.	Field data sheets are filed and available for sighting.	C	
Quarterly	Monitoring data will be provided to ERC in accordance with the Environmental Reporting Procedure.	Quarterly Reports to ERC sighted.	<i>See Environmental Reporting procedure (Appendix 2)</i> Noise monitoring data is reported to ERC on 3-monthly basis. Quarterly provision of these data is considered appropriate as ERC meets every quarter.	C	
As applicable	In the event that noise from site operations is above 45 dB(A) L_{Aeq} as measured according to SEPP-N1 (<i>no longer applicable</i> ²) at a sensitive site, strategies for noise abatement will be developed and implemented to achieve compliance.	Noise Monitoring Results (2023)	No exceedances of 45 dB(A). Note: SEPP references are no longer applicable and noise monitoring needs to be updated to reflect meeting environmental values for Noise as specified in the environment reference Standard 2021	mnc	Refer to recommendation in EMP Section B-1
2.2.4	Monitoring Schedule <ul style="list-style-type: none"> Fortnightly handheld at 7 closest sensitive receptors Periodic monitoring (daily) at commencement of change in activities until consistent (hand held) Periodic monitoring during mound construction works (certified by consultant) Monitoring in response to justified complaint (certified by consultant) 	Fortnightly noise monitoring data summary sheets 2023 (sample sighted); Calibration Certificates Noise Level Metre dated 10/02/24.	Fortnightly monitoring conducted.	C	
2.3 BLASTING					
2.3.1	Objective To ensure that vibration from blasting operations is controlled to comply with ERR environmental guideline limits for new operations. To ensure that blasting operations generally are conducted in a manner that minimises the risk of adverse environmental impact.	Blasting monitoring summary data, 2023. Sample of monitoring reports (09/01/23 – 15/12/23).	Objectives have been achieved.	C	
2.3.2	Targets 100% compliance with ERR environmental guideline limits for new operations – PPV 5mm/sec for 95% of blasts in 12 Month period. Peak Airblast of 115dB for 95% of blasts in 12 Month period.	As above	Targets met. No exceedances.	C	
2.3.3	Management Measures	As above			
All blasting events	Blasting will be carried out in general accordance with the SHE Guideline 3.14 – Blasting & Explosives, and in strict accordance with the Blast Management Plan, WA5.4.067.V.PAK (Appendix 8).	As above and below.		C	

² See Technical Guide: Measuring and Analysing Industry Noise and Music Noise, EPA Pub. 1997, June 2021

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NA – Not Auditable (see comments for reason why)

EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
All times	Except with the written approval of the Responsible Authority, blasting will be restricted to between the hours of 11:00am and 12:00 noon and between 2:00pm and 3:00pm Monday to Friday. No blasting will occur on a Saturday, Sunday or public holidays. If blasting is approved outside these times, notice must be given to all potentially impacted residents, to the satisfaction of the Responsible Authority.	As above	All blasts within required time 'windows'.	C	
All blasting events	Air and ground vibration resulting from blasts will be measured at the nearest sensitive sites to the extraction area, or some other convenient location that will permit the vibration at the nearest sensitive site to be reliably estimated. <ul style="list-style-type: none"> The current monitoring locations (see Figure 1 in the Monitoring Schedule) namely the quarry office (V1), the north-east corner (V2), Toomuc Valley Road (V3) and Waterhouse property (V4) will continue to be used to assess blast noise and vibration. 	As above	Residents notified prior to each blast . Blasting records show air and ground vibration was measured at the four locations specified within the EMP.	C	
Where vibration measurements indicate future exceedance may occur	<ul style="list-style-type: none"> Vibration measurements will be monitored. In the event that the vibration measurements indicate that the 95% ERR regulatory guideline limits may be exceeded in future blasts, the blasting specification and shot-firing practice must be reviewed and modifications made, as appropriate, to ensure continuing compliance. 	As above	Residents notified prior to each blast . Blasting records show air and ground vibration was measured at the four locations specified within the EMP.	C	
2.3.4	Monitoring Schedule	Vibration Monitoring Summary Data Sheet, 2023; Reports for blasts (sample selected); calibration certificates for monitors (sample checked for currency).	Vibration monitoring is conducted by the blasting contractor, Terrock. Vibration monitoring equipment is factory-calibrated annually, with certificates kept by Terrock and made available when requested.	C	
2.4	SURFACE WATER, DRAINAGE AND GROUNDWATER				
2.4.1	Objectives To minimise any potential impact on receiving waters. To progress water management such that any discharge to surface waters is during periods of very high rainfall only. To ensure that water discharged from the Quarry does not affect the beneficial uses (<i>environmental values</i>) of the receiving waters. To assess any long term trends in groundwater levels.		Objectives achieved.	C	

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
2.4.2	Targets 100% compliance with the requirements of the EPA Licence. 100% conformity with groundwater level monitoring requirements	EPA Licence OL544; Monitoring Data summary tables (2023); Groundwater level summary data (quarterly reports to ERC)	Two (2) turbidity exceedances were reported to EPA (PSN3066 12/01/24 and PSN 3068 15/01/12) and were the result of significant rainfall events at the time. No significant offsite impacts were reported, Holcim advises it is investigating further measures to prevent a recurrence.	mnc	To assist in the avoidance of exceedances of surface water discharge from the site: <ul style="list-style-type: none"> progress the feasibility investigation for the installing of the larger pump including an assessment on what impacts that would have on the integrity of Donnazan's Dam. undertake a Hydrological Assessment to better understand catchments volumes within the quarry and capacity needed to allow for capture and recycle of surface run-off in a significant rain event (i.e. 1:20 year event, 1:50 year event, 1:100 year event).
				C-OFI	Consider adding process for the activation of pumps to manage water discharge from dams in a severe weather event to the site specific work procedure 'Management of severe weather event PAKSWP87 Rev2 Reviewed 06/10/22'.
2.4.3	Management Measures Discharge of water from the site will be managed and monitored (for both quality and discharge volume) in accordance with the EPA Licence. <i>Note that all surface water discharging from the premises must meet Licence conditions when sampled at the sampling point (i.e. V-notch weir).</i>	WQ & Flow Summary Spreadsheets, 2023; Notifications to EPA – 12 Jan 2024, and 15 Jan 2024	Two (2) turbidity exceedances were reported to EPA: <ul style="list-style-type: none"> PSN 3066 12 January 2024 – surface water discharge was tested and revealed a turbidity concentration of 94 NTU which exceeds the license limit of 30 NTU. PSN 3068 15 January 2024 – surface water discharge was tested and revealed a turbidity concentration of 43.1 NTU which exceeds the license limit of 30 NTU. 	mnc	Refer to recommendation in section B-2.4.2 above.


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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
Every 12 months	Sediment in the settlement ponds is removed at least once every 12 months and stockpiled within other areas of the quarry.	Invoice, MC Earthmoving	<p>Sediment was removed from 'dam' (this was clarified to mean one or other of the settlement ponds, not Donazzan's Dam) in March 2022 (Photo 7).</p> <p>PHOTO 7: SEDIMENT REMOVED FROM DAM</p> 	C	
All times	<p>Algae will be controlled by:</p> <ul style="list-style-type: none"> maintaining flowing water across ponds and Donazzan's Dam, minimising nutrient input, e.g. by maintaining a septic tank pump out frequency of at least once a year, maximising nutrient uptake, discharge or isolation from the water column, maximising dissolved oxygen levels by circulating water, ensuring water bodies receive sufficient water to provide regular and significant overflows, ensuring water bodies have no stagnant zones, and that all sections of the water bodies are subject to flowing water when rainfall enters the system, managing the catchment areas directly upstream of Donazzan's Dam to reduce the amount of nutrients entering a water body, and reviewing ponds and dams to evaluate and act to avert potential stagnant areas. 	Inspection Check lists (sample sighted);	No algal growth was reported	C	

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
As required	In the event of algal bloom(s); <ul style="list-style-type: none"> Water body flushing to break up and inhibit algal growth, and dissolved air flotation and surface skimming to remove algal mass, will be considered as short term remedial measures, a specialist will be engaged to assist with treatment and removal, records will be kept of all such occurrences to help determine likely trends that could assist in future water body management, chemical treatments (e.g. use of herbicides/algicides) will only be used as a last resort measure if required, and then only with prior approval from the relevant government agency (for water bodies situated on existing creeks). 		As above, Holcim advises the Dam has not experienced an algal bloom during the year 2023/22.	NA	
All times	The plantings undertaken as part of the water quality management system will be maintained in accordance with the Landscape and Rehabilitation Management Plan (e.g. weed control, plant replacement).	Annual Rehabilitation Report, Naturelinks, 2023. Observation, photographs	Plantings observed to be well maintained and confirmed in 2023 rehabilitation annual report.	C	
During initial clearing	Areas of vegetation disturbance and ground cover shall be minimised during opening up of new operational areas to prevent erosion.	Observation	A topsoil stripping campaign was undertaken on the NW face in 2023 and topsoil was relocated to the SW face for progressive rehabilitation (Photo 4).	C	
All times	Clearing and construction activity associated with the development of the site shall be carried out in accordance with "Construction Techniques for Sediment Pollution Control" EPA Publication No 275 (as amended) ³ .	Observation	Clearing and construction activity undertaken during the audit period (i.e., topsoil stripping campaign and progressive rehabilitation) appeared adequate with any surface water run-off flowing into the quarry pits.	C	
As required	Soil stockpiled for later rehabilitation works will be stored in mounds no greater than 2m high and contoured and grassed to minimise erosion. Mounds will be constructed and located to minimise any visual disturbance and to avoid contamination with other materials.	Direct observation	Stockpiles along south western rim appeared to be in good condition.	C	
As required	Overburden will be stored in worked out areas of the excavation for later use in rehabilitation or sold or used to rehabilitate final faces when terminal faces are available. Overburden storages will be constructed to control drainage and maintain stability.	Direct observation	Overburden is located within quarry where rock has been removed. Overburden also underlays the main quarry floor pad, with product stockpiles on top.	C	
As required	Diversion drains will be provided around the top of the quarry and workings to direct surface run-off away from operational areas.	Direct observation	Drains observed to be in place.	C	

³ See EPA Publication 1834.1, *Civil construction, building and demolition guide*, September 2023

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
As required	Channelling of water flow (rill formation) will be minimised and any channel flows stabilised.	Direct observation	Minor rill erosion from new progressive rehabilitation surfaces	C	
As required	Where practical, erodible areas that remain bare and undisturbed for long periods (i.e. greater than 2 months) will be stabilised by covering with mulch, anchored fabric or topsoil covered and seeded with Sterile Rye grass.	Direct observation, photographs	Erodible areas have been minimised – site advises that placement of material at shaped rehabilitation areas does not lead to erosion prior to plantings taking hold.	C	
As required	The dual triple interceptor system treating wash water from the plant and equipment wash down pad will be regularly maintained in effective working condition.	Plendrive, Jan 2024 (septic);		C	
Quarterly	Water level gauging will be conducted quarterly, and an annual evaluation undertaken, to determine how the groundwater levels respond to the following: <ul style="list-style-type: none"> Seasonal rainfall changes; Extension of the quarry; Revegetation to parts of the plateau surface; and Progressive rehabilitation of quarry. 	AECOM letter report, 23 Feb 2024 <i>Groundwater and Spring Review, Pakenham Quarry</i> . Quarterly monitoring undertaken in April, June, Sept and Dec 2023 CHD Pakenham Quarry Hydrogeological Review, 28 June 2023	Detailed report indicates that “the groundwater and spring monitoring (data) collected over the 2023 monitoring period show no observable impact on water quality and spring flow observable influence based on quarry operations.” Holcim should implement the recommendations of the AECOM Groundwater and Spring Review letter report, 23/02/24 and the GHD Hydrogeological Review Report 28/06/23	C-OFI	Implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report of 23/02/24. Progress the additional recommendations in the Hydrogeological Review of collecting continuous flow data for the springs. This data could be very valuable should the quarry extension proceed that is being investigated in the north east corner quarry.
Monthly	Monthly water level gauging (MB01 – MB06) will be conducted by site personnel.	Field forms.	J. Everett gauges bores. Summary data included in ERC quarterly report.	C	
Quarterly	Quarterly recording of in-pit water levels (Northern and Southern dams).	Quarterly reports to ERC, Holcim.	Reportedly conducted by a contract surveyor. Water levels in both dams have remained consistent throughout the year. Holcim has installed visual level gauges in each dam and are reportedly calibrated by survey so water levels can continue to be recorded as R.L.s (AHD).	C	
Annual	Properties surrounding the quarry will be regularly assessed to confirm that the assessed beneficial uses (<i>environmental values</i>) of groundwater (in accordance with SEPP Groundwaters of Victoria ⁴) on the properties is supported by actual practices.	As above	As above	C	
Fig 4&5 Water Management System					
2.4.4	Monitoring Schedule As per Appendix 11 (as amended by new EPA Licence conditions) - <ul style="list-style-type: none"> Dams #1 and #2 Visual Inspection for sediment and algae (monthly) 	pH, Conductivity, Turbidity and Temperature gauges calibration certificates (Thermo Fisher); Field calibration summary sheet; WQ summary sheets 2023; Daily Flows	Monitoring activities conducted as specified	C	

⁴ SEPP revoked. See EPA Publication 668.1, *Hydrogeological assessment (groundwater quality) guidelines*, October 2022

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	<ul style="list-style-type: none"> Settlement Ponds #1 and #2 Visual Inspection for sediment and algae (quarterly) Donazzan's Dam Visual Inspection for sediment, algae and spillway erosion (after storms) V-notch Weir Flow Rate EPA Sampling Point testing (weekly during discharge) Monitoring Bores MB01-06 (monthly) Monitoring Bores MB01-06 (quarterly) Pit water levels (quarterly) 	summary sheets 2023; Inspection reports, 2023;			
2.5	SLOPE STABILITY				
2.5.1	Objective To ensure slopes both outside and within the Quarry are as stable as possible to minimise the risk of landslip.	No new slips/landslides reported.	Achieved.	C	
2.5.2	Target No avoidable landslips.		Met.	C	
2.5.3	Management Measures				
As required	Any indications of slope instability such as cracking, heaving or settlement, increased areas of seepage or any other unexpected movement will be referred to a geotechnical specialist for advice.	AECOM, Mt. Shamrock Quarry - Toomuc Valley Slope Inspection, letter report dated January 2024.	AECOM revisited and inspected landslip areas and prepared a report. The report makes a number of recommendations for remedial works to mitigate the minor movements and other land stability issues observed. These recommendations should be implemented through the ICARE system.	C-OFI	The recommendations from the AECOM, Mt. Shamrock Quarry - Toomuc Valley Slope Inspection, letter report dated January 2024 should be implemented through the ICARE system.
As specified in Monitoring Schedule	Regular visual monitoring of the slopes in Toomuc Valley on land owned by Holcim will be conducted.	Monthly inspection checklists sighted (sample).	The recently issued slope stability report by AECOM (Feb 2024) recommends that regular inspections should continue in accordance with sub-section 2.5.4 of the EMP	C	
As specified in Monitoring Schedule	Monitoring of the condition of any vegetation or new drainage and replanting or repairs will be undertaken as necessary as part of Landscape and Rehabilitation Management Plan.	As per Section C below		C	
As required	The progressive excavation will require ongoing rehabilitation activities to control erosion, and then make all the earthworks safe and compatible as possible with the surrounding landscape. Construction and revegetation will be undertaken in accordance with consultant's reports and requirements as per the site Work Plan.	As per Section C below		C	
As required	The rehabilitated slopes will require construction of internal and surface drainage, vegetation establishment, fill compaction, trial sections, and development of technical specifications under the guidance of a geotechnical specialist and reviewed with	As per Section C below		C	

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	ERR in accordance with the Work Plan Landscape and Rehabilitation Report specifications.				
As specified in Monitoring Schedule	Regular visual monitoring of all slopes including any rehabilitated slopes, overburden stockpiles, operating faces and crushed stockpiles will be conducted and if any change in the slope conditions (such as cracking, heaving or settlement of the quarry walls or floor, increased areas of seepage or any other unexpected movement) is observed, specialist geotechnical advice will be sought.	Monthly Slope Stability Checklists (sample sighted 16/01/23, 21/03/23, 10/08/23, 18/12/23)	Inspections indicate slopes are stable. New plantings and rehabilitated slopes are being inspected by Naturelinks on a regular basis as part of the rehabilitation and maintenance works (see LRMP section below).	C-OFI	Consider including the checking and completion of records for overburden, crushed rock stockpiles in the slope stability inspection as a form already exists for recording this data.
2.5.4	Monitoring Schedule <ul style="list-style-type: none"> Overburden Stockpiles, Crushed Stockpiles and Operating Faces Rehabilitation of Operational Areas Land Slips – Toomuc Valley, general Land Slips – Toomuc Valley, general Land Slips – Toomuc Valley, closest to blast New Planting or drainage works (See Schedule in EMP for further detail)	As indicated above	Inspections are being done monthly which is above and beyond the six monthly requirement specified in the monitoring schedule. See comments above	C-OFI	As above
2.6	GHG EMISSIONS				
2.6.1	Objective To minimise greenhouse gas (GHG) emissions resulting from quarry works and operations.		Achieved.	C	
2.6.2	Targets Achieve current annual targets, namely, overall reduction target of 3% of combined emissions from electricity, fuel and explosives.	GHG calculation spreadsheet (2023).	Target achieved if not accounting for the topsoil stripping regime. This was explained to the ERC in Q4 2023	C	
2.6.3	Management Measures				
All times	Aim for continuous improvement of GHG intensity of production by identifying and controlling energy intensive processes as part of Holcim SHE element 6.04 Energy Efficiency'.	As above		C	
As required	Regular monitoring and NGER reporting of energy use and GHG emissions.		Energy use is reported to Corporate for inclusion in annual NGERS reporting to Government.	C	
As required	Review and further evaluation of all transportation within the quarry against current internal regional fuel efficiency benchmarks;		Land bridge construction completed and in use November 2022 resulting in fuel savings.	C	
All times	Incorporate energy and GHG awareness into training of managers and supervisors.	Induction.		C	

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
2.6.4	Monitoring Overall reduction target of 3% in CO ₂ – e (t) for combined fuel, electricity and explosives usage. Fuel – per tonne Electricity – KWh/tonne Explosives – tonne/tonne In the event during the reporting period, the operation cannot meet its reduction targets through process improvements, Holcim can engage or participate in a government approved offset arrangement. For example, additional renewable energy purchase. Verification of participation will be provided to the ERC for review.	GHG Calculator (spreadsheet), 2023.	As explained above	C	
2.7	TRAFFIC MANAGEMENT				
2.7.1	Objective To minimise the impact of quarry traffic on the local amenity.		Objective is being achieved to the extent practicable.	C	
2.7.2	Target Compliance with (or completion of) all actions specified in the s.2.7.3 of this EMP.		Complies – target met.	C	
2.7.3	Management Measures				
All times	The wheels of all trucks leaving the site must be clean before trucks travel onto any part of the public road network. All trucks leaving the site will be cleaned by passing through the wheel and truck wash facility at the main gate (see s.2.1.3 of EMP). All vehicles carrying materials from the site must be loaded and transported in a manner which prevents spillage of materials onto a public road.	Observation	Wheel wash in operation.	C	
		As above; Tarpaulin check data in ERC quarterly reports.	Drivers are inducted. Periodic inspection of tarpaulins in use.	C	
All times	Early morning truck movements are to be scheduled to avoid queuing outside the boundary of the site.	Induction records (sample sighted), induction booklet.	No trucks are accepted onto site before 7am – signage to this affect has been removed by Shire. This is clearly specific in truck driver inductions Holcim advise that the Cardina Shire Council have taken down signage regarding early morning queuing of trucks and will not replace them. ERC are aware of the issue. Trucks arriving before 7am are raised as a hazard in ICARE.	C	
	All vehicles associated with quarry activities, including trucks and machinery, must enter and exit the site via Mt Shamrock Road.	Observation		C	
2.7.4	Monitoring Housekeeping checks (monthly) – <ul style="list-style-type: none"> Wheels clean before entering public road Spillage of materials onto public road Truck queuing during early morning movements Engine brakes sign clearly visible 	Gatehouse operator – visual checks; ERC Quarterly report (visual checks data)	Random checks of tarpaulin compliance as part of checklist. The engine brake sign on Mt Shamrock Road was clearly visible.	C	


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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	Any daily excursions to be recorded in incident register.				
2.8	NET GAIN MANAGEMENT PLAN				
2.8.1	Objective To provide vegetation that offsets the loss of vegetation associated with the Quarry and provides a net gain of Habitat Hectares.		This objective has been achieved. The NGO areas continue to be actively managed to maintain their habitat value and offsets	C	
2.8.2	Target Establishment of vegetation in accordance with the Native Vegetation Management Framework and the Net Gain Offset Management Plan (NGOMP, Biosis Research, September 2007 – Appendix 13) by January 2009 (as specified in the s.173 Agreement)		<p>NGO areas have been established and are being well maintained by Naturelinks (Photo 8). Weeding and maintenance has continued.</p> <p>PHOTO 8: NET GAIN OFFSET AREA WELL ESTABLISHED</p> 	C	
2.8.3	Management Measures				
As required	Plantings that do not survive will be replaced.	Mt Shamrock Rehabilitation Report, (Naturelinks 2023)	The 2023 Naturelinks report indicates additional plantings south of the creek line in the bottom half of the southern zone. These plantings were sighted during the audit.	C-OFI	Progress recommendations in 2023 Naturelinks report
As required	Supplementary watering of plantings will be carried out as required and permitted by prevailing water restrictions.	As above	Watering was not required during the audit period due to above average rainfall.	C	
Monthly during June-December	Weed (including identified woody weed) control works will be conducted on a monthly basis during the primary weed season (June to December inclusive) and at other times as required.	As above	Weeds observed to be well managed with weed control activities being observed during the audit.	C	
Declared (by CFA)	<ul style="list-style-type: none"> Maintain fire breaks during bf season Preventative inspections for fire hazards 	BF Inspection checklist, Jan 2023 and Dec 23.	Bushfire preparedness inspections occur and include the NGO areas.	C	

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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
Bushfire season					
2.8.4	Monitoring Bushfire prevention inspections (monthly during bf season)	Bushfire inspections (sample sighted); Mt Shamrock Rehabilitation Report 2023.	Inspections completed. Visual inspections are reported to have occurred.	C	
2.9	CULTURAL HERITAGE				
2.9.3	Management Measures All items required under section 2.9 are completed and noted in Appendix 14 <i>Completed Monitoring/Management Measures</i> of EMP.				
2.10	FIRE MANAGEMENT				
2.10.1	Objective To ensure that the risk of fire is minimised.		Objective has been achieved.	C	
2.10.2	Target No fires		Met – none reported.	C	
2.10.3	Management Measures				
Annually	Undertake annual on-site fire prevention works, prior to the declaration of the "Fire Danger Period", in consultation with the Responsible Authority and the local Country Fire Authority. <i>Specified in BMP –</i> ▪ <i>Warden training up-to-date</i> ▪ <i>Check extinguishers and training</i> ▪ <i>Complete emergency drill</i> ▪ <i>Complete bushfire mitigation checklist</i>	Bushfire Management Plan, 2023; CFA Permit #23/2434480C and #23/2434481C; Training Register – attendance record 3/6/22; Bushfire Readiness Inspection Checklists 2023, Smoke Alarm Register and Test tags (6 monthly 13/12/23 and 20/06/23)	A range of prevention works undertaken - ▪ Evacuation drills ▪ Extinguisher checks in bushfire readiness checklist ▪ Site inspection and fuel removal ▪ Smoke alarms/detectors – need to update check sheet to remove detectors with no remote indication ▪ BMP checklist completed prior to fire season and sighted communication with Quarry Manager and CFA requiring a review of the Quarry Bushfire Management Plan 2023	C	
All times	Access for all emergency vehicles will be provided and maintained at all times through the site.	Observation	Access is provided and update locations for double gate access included in the 2023 Bushfire Management Plan	C	
All times	Fire prevention and response equipment will be provided and maintained in accordance with the Holcim Emergency Response Procedure and Quarry Emergency Procedures flip chart.	As above.	Fire extinguishers and mobile plant fire suppression available at the site	C	
2.10.4	Monitoring ▪ Evacuation and drill (annual) ▪ Smoke detectors (6 monthly) ▪ Fire prevention works inspection (annually prior to fire danger period) ▪ Firefighting equipment – mobile (monthly) ▪ Firefighting equipment – other (AS1851)	Records as cited above.	Smoke alarms tested June and December. Fire suppression systems in mobile plant checked as part of extinguisher service.	C	
2.11	WATER CONSERVATION				


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EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
2.11.3	Management Measures				
	All items required under section 2.11 are completed and noted in EMP Appendix 14 <i>Completed Monitoring/Management Measures</i> .				
2.12	WASTE MANAGEMENT				
2.12.1	Objective Minimise waste quantities, comply with legislative requirements and progress towards the recycling and re-use of all wastes.		Overall, the objective is being achieved.	C	
2.12.2	Targets Establishment of quantifiable and achievable waste reduction targets by December 2007. All recyclable wastes removed from waste stream to landfill by June 2008 ⁵ .	Waste Summary Spreadsheet, 2023.		C-OFI	Include appropriate waste management target(s) in the EMP after submission to ERC for comment, and Council for approval, as provided for in s.8.3 EMP Variation and Appendix 3 of the EMP, 2021.
2.12.3	Management Measures				
Timing	Action				
June 2008	Characterise all waste streams and develop measures to: <ul style="list-style-type: none"> minimise site waste generation; segregate waste groups; and direct landfilled wastes to recycle/re-use wherever possible 		Sighted segregation of waste groups during the audit and use of designated bins for various types of wastes (Photo 9). Sighted bins for recycled materials e.g. cardboard etc PHOTO 9: GOOD SEGREGATION OF WASTES 	C	
	Develop quantifiable and achievable targets for the reduction of waste volumes for each of the identified waste groups, and the measures to be taken to achieve the targets.	Waste Summary Spreadsheet, 2023.	Waste summary spreadsheet included waste targets	C-OFI	Include reporting against quantifiable waste management targets in the ERC Quarterly Report to demonstrate improvement in waste reduction.

⁵ The targets in the revised EMP have been mistakenly carried over from the original version of the EMP. Holcim advises that a mass limit of waste to landfill as specified in the 2015 version of the EMP should have been continued within some form (e.g. "no greater than X tonnes waste to landfill per annum"). Additionally, quantitative and qualitative targets can be set for individual waste streams (over different timescales depending on prevailing circumstances) and based on the principles of the waste hierarchy and circular economy.

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Annually	Sediment in the settlement ponds is removed at least once every 12 months and stockpiled within other areas of the quarry.	Sighted MC earthmoving invoice for settlement ponds	Observation	C	
As required	All prescribed industrial waste (PIW, now referred to as <i>priority waste</i>) such as waste oil is to be stored, and transported from the site, in accordance with EPA prescribed waste transport requirements (<i>Reference 6 of this audit report</i>).	Observation; eWaste email trail; EPA Waste records (sample sighted). Photographs.	Reportable wastes are well segregated, stored and appropriately labelled. eWaste bin at front of office. Documents sighted confirming it is going to lawful place for recycle.	C	
Annually	The site's septic sewage system will be pumped out regularly.	Plendrive Waste Disposal – invoice dated 09/01/24		C	
Annual	Conduct an annual waste survey to establish the types, quantities and re-cycling/ re-use percentages for all site wastes.	Waste Survey, 2023	Sighted 2023 Pakenham Quarry Waste Survey	C	
Annually	Use the outcomes of the annual survey to set quantifiable and achievable annual waste reduction targets for the site for each waste stream identified.			C-OFI	Update the EMP to include a form of words that best reflects a credible and effective waste minimisation and disposal strategy that aligns with the waste hierarchy and the circular economy principles of sustainable resource management.
2.13 HOUSEKEEPING/PREVENTATIVE MAINTENANCE					
2.13.1	Objective Establish effective housekeeping checks and preventative maintenance programs to control environmental hazards.		Achieved.	C	
2.13.2	Target Housekeeping audits identify no more than 5% nonconforming practices (except where applied to Consent conditions, where 0% nonconformity applies)	Monthly inspections by QM (sample sighted).	Monthly inspections cover all relevant environmental issues.	C	
2.13.3	Management Measures				
Timing	Action				
Monthly	Housekeeping checks will include the following environmental issues: <ul style="list-style-type: none"> Chemical and fuel bunding; Bund content and drainage point valve in off position; Spill clean-up and spill kit equipment contents; Waste container labelling; Tarping practices; Road and vehicle cleanliness; Unusual noises; Visual dust presence of significance; and Segregation of Inert type wastes from solid and from industrial wastes. 	General Environmental Hazard and Housekeeping Inspections – 2023 (samples sighted). Environmental Housekeeping inspections 2024 (samples sighted) Attachment 6.2A Environmental Hazard Inspections (samples sighted_	Sighted various checklists	C-OFI	Consider consolidating housekeeping, environmental and hazard inspections sheets into one document.


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Monthly/ annually	PM system checklists are available to capture: <ul style="list-style-type: none"> Fixed System Dust Suppression Watering truck and sweeper vehicles Water spays and lines Spill Kits 	WamGroup – Silo venting, pug mill and Dust extraction service records (Mar, Jun, Aug, Nov 2023);	Water sprays – inspection conducted monthly. Faulty items picked up and maintenance is scheduled and completed.	C	
Annually	Dust extraction units will be serviced annually.	Absorb – Spill kit service reports Feb, May, June, Aug, Nov 2023; Spill kit map;	Spill kits checked and restocked by contractor. Most found to be well stocked. Sighted PM inspection reports (water sprays, dust collector, cement silo etc – sample); PM repairs spreadsheet; Sighted TDI Australia Donalson Dust Unit Report (03/08/23) and scheduled PM repairs		
Water truck observed in action.					
2.14 STORAGE AND HANDLING					
2.14.1	Objective To minimise chemical and fuel run-off and land contamination due to spillage/ release/ stormwater flushing.		Objective achieved.	C	
2.14.2	Target No visible oils/fuels in stormwater discharging from discharge point. No significant soil contamination.	Observation; Water quality monitoring data sheets (sample).	Targets met.	C	
2.14.3	Management Measures				
All times	Signage will be maintained around bunded fuel tanks describing the filling procedure to be followed.	Observation		C	
All times	All fuels and chemicals in containers over 100 litres will be bunded when stored or in use.	Observation; Photograph	Measure met at maintenance depot and contractor’s container in quarry (Photo 10). PHOTO 10: EXAMPLE OF BUNDED STORAGE OF FUEL, OILS AND CHEMICALS	C	
					


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As required	Captured rainwater within fuel/oil storage bunds will be released through triple interceptor prior to release to the stormwater system.	Observation	<p>Advised that bunded fuel trailer collects water that is manually discharged through T.I.T (Photo 11). Bunds are enclosed or roofed.</p> <p>PHOTO 11: TRIPLE INTERCEPTORS USED AT SITE</p> 	C	
As required	Areas of significantly hydrocarbon-contaminated soil will be excavated and remediated in accordance with the Hydrocarbon Land-farming Procedure.		<p>None reported or observed.</p> <p>Holcim advises that the electrical company owning the transformer is planning to replace it with a new one but this is yet to happen.</p>	C	

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2.15	DONAZZAN'S DAM INTEGRITY				
2.15.1	Objective To maintain the structural integrity of Donazzan's Dam.			C	
2.15.2	Target No leakages, spills or other containment failures associated with the Dam.		No leakages, spills etc. reported. Target met.	C	
2.15.3	Management Measures				
5 yearly. Next review to be conducted in 2025.	Engage specialist geotechnical consultant to review dam structural integrity.	AECOM, Consequence Category Assessment, Feb 2023;	Consequence assessment has been completed. Bathymetric Survey has been undertaken	C	
2.15.4	Monitoring <ul style="list-style-type: none"> Inspection for dam integrity (monthly) – visual, BH1&BH6 Integrity review by specialist (5 yearly) 	Monthly Dam Inspection checklists (samples sighted throughout 2023)		C-OFI	Update field measurement location at Donnazan's dam in the checklist/procedures to reflect at bottom of spillway rather than exit point of dam.
SECTION C	REHABILITATION: PROVISION, STATUS & PLAN UPDATE				
1	REHABILITATION AND VEGETATION				
1.1	Objectives The main objectives for the landscape and rehabilitation of the quarry operations area are to: <ul style="list-style-type: none"> create an ecological community with a predominance of indigenous species to provide a contribution to net gain objectives and habitat hectares. minimise the visual impact of the proposed extension from surrounding viewpoints stabilise soil. create an environment that will provide habitat for local and migratory fauna. create a safe and functional landscape. 	Observations, Photographs. Other evidence as set out below.	Objectives are considered to have been met. Refer to comments below	C	

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	<ul style="list-style-type: none"> reinforce the local landscape character through the use of indigenous EVC units of the Pakenham area address drainage issues. ensure that existing vegetation is maintained where practicable, ensure that landscape screening and rehabilitation is successfully established and subsequently maintained, minimise the visual impact of the quarry operation upon the existing landscape of the local area, ensure that vehicles entering or leaving the site do not spread weed seeds to or from the site. 				
1.2	Targets Successful establishment and maintenance of landscape screening and rehabilitation in accordance with the Work Plan attachment <i>Landscape and Rehabilitation Report, ERM</i> (January 2005) and the <i>Landscape & Rehabilitation Management Plan, 2007</i> , (LRMP) to the satisfaction of the ERR and the Responsible Authority. Maintenance of existing vegetation where practicable.	Observation - Photographs; Mt Shamrock Rehabilitation Report, 2023 (Naturelinks)	Targets have been met – quarry rehabilitation planting is progressing as planned (Photo 12). LRMP has been reviewed and revised as specified below. PHOTO 12: EXAMPLE OF QUARRY REHABILITATION PLANTING 	C	
1.4	Management Measures				
1.4.1	General The Landscape and Rehabilitation Management Plan (LRMP, rev3, July 2021) has been prepared to deal with general rehabilitation and landscaping under the Work Plan and associated documentation, slope stability planting, and surface water plantings, as required by	As above	As above		

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	<p>the Permit. This plan addresses issues relating to maintenance including plant establishment, erosion control, weed control, planting protection, fencing, safety and other relevant management issues. The LRMP covers all planting and rehabilitation within the quarry operational and non-operational areas. The LRMP deals in detail with the management of the following aspects of quarrying operations as they relate to landscape and rehabilitation:</p> <ul style="list-style-type: none"> ▪ Vehicle Management - Inspection of Vehicles, Clean down of Machinery, Vehicles and Equipment, Use of public roads and pathways, Provision of public safety ▪ Topsoil Scraping and Stockpiling ▪ Weed and Vermin Control, and Herbicide Use ▪ Existing Vegetation Management, including: <ul style="list-style-type: none"> - Seed Collection - Topsoil spreading - Hydro-seeding - Setting out works - Fencing and Signage - Supervision - Cleaning Up - Erosion control - Maintenance during plant establishment period of 52 weeks ▪ Soil Testing <p>Reference should be made to the LRMP for all such issues arising as part of the on-going maintenance of landscaped and rehabilitated areas. The following sections refer to the LRMP, attached to the EMP at Appendix 6. For further details on each section referenced on the left hand side, please refer to the LRMP.</p>				
LRMP s.1.2	<p>This LRMP is to be read in conjunction with the following plans of the development prepared by ERM for Mt Shamrock Quarry:</p> <ol style="list-style-type: none"> 1. Quarry Operational Area – Rehabilitation Plan – Dwg. L1a, 2. Non-quarry Operational Area: Landscape Plan Planting Phase A – Dwg. L2a, 3. Non-quarry Operational Area: Landscape Plan Planting Phase B – Dwg.L3a, and 4. Non-quarry Operational Area: Landscape Plan Planting Phase C – Dwg.L4a, 	LRMP, June 2021, Rev 3, July 2021 (Appendix 6 to EMP)	No “amended complying plans” are attached to the LRMP at Appendix 6 of EMP – the plans attached are from the original ERM, 2005, report (ref. 4). Whilst the plans exist, they appear to be attached to the end of the EMP before the appendices.	C-OFI	Update the LRMP to include the amended complying plans to reflect changed thinking in relation to EVCs applicable to the quarry site and in particular the southern faces currently being rehabilitated.

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	as amended to comply with planning permit Condition 8. The amended complying plans are attached to this LRMP.				
LRMP s.2.1 – Rehab Manager	<p>A Rehabilitation (“Rehab”) Manager is to be appointed with responsibility for the following:</p> <ul style="list-style-type: none"> Ensuring any contractors and staff are aware of the LRMP and its requirements; Carrying out any monitoring, testing and corrective actions; Reporting and reviews as specified in this LRMP; Land management practices undertaken; Rehabilitation works completed; Complaints received and properly recorded and actioned; Nonconformities and corrective actions; and Results of site inspections. <p>The Rehab Manager may change as the project progresses through the detailed design, quarrying/planting stages, to the on-going management phases, during rehabilitation.</p>	LRMP, June 2021, Rev 3, July 2021 (Appendix 6 to EMP); EMP s.3.0 <i>Roles & Responsibilities</i> .	Rehab Manager is Leigh Elliott, Quarry Manager, Holcim. Works are conducted by Holcim’s contractor (JE) and Naturelinks Landscape Management P/L (Naturelinks).	C	
LRMP s.2.2 - Reporting	<p>The Rehab Manager will submit land management reports to the Quarry Manager as specified and described in the LRMP, viz.</p> <ul style="list-style-type: none"> Rehab Manager to QM, 6 monthly Land management reports, 2 yearly 	Holcim 3 monthly report to ERC with LRMP Updates; Mt Shamrock Rehabilitation Report, 2023 (Naturelinks); Daily Works Checklists (Naturelinks), submitted to Holcim monthly.	<p>Note: reporting timing is different to that specified in the LRMP, namely -</p> <ul style="list-style-type: none"> QM to ERC, 3 monthly Rehab Manager to QM, annual with daily work checklists submitted monthly 	C-OFI	Update EMP to reflect correct reporting timing to align with LRMP or vis versa – 3 monthly to ERC, annually for rehab report and monthly for inspection checks
LRMP s.2.3 – Complaints Register	<p>Any complaints received from the public regarding land management issues associated with the conservation and rehabilitation components of the quarry’s activities will be entered and retained in the ICARE 2.0 electronic incident database. The minimum details to be recorded will include:</p> <ul style="list-style-type: none"> Date and time of alleged incident. Nature of the complaint. Name, telephone and address of the complainant. Investigation or actions initiated. Response / mitigation measures undertaken / additional monitoring. <p>The ICARE 2.0 electronic database will be kept throughout the quarrying, planting and rehabilitation and ongoing land management phases.</p>		Holcim advises that, commendably, no complaints have been received during the audit period.	C	
LRMP s.2.4 – Non-conform-	Non-conformances may be identified through the process of monitoring, the complaints register, site inspections and site audits or through the LRMP review process. It is the responsibility of the Rehab Manager	Vegetation Monitoring sheets (monthly); Mt Shamrock Rehabilitation Report, 2023 (Naturelinks)	Kangaroos and deer continue to be problematic in knocking over new plantings (kangaroos) and grazing new plantings. Deer are now being actively managed (i.e. culling and use as Pet food) by Naturelinks.	C-OFI	Continue to implement recommendations in the Mt Shamrock Rehabilitation Report 2023

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ance & Corrective Actions	to ensure that these non-conformances and required corrective actions are documented and corrective actions implemented within a reasonable time frame.				
LRMP s.2.5 – Soil Testing	Where testing of soils for contaminants is indicated, sampling will be done by trained personnel and analysis conducted by an analytical laboratory that is NATA accredited for each analysis. Results will be evaluated against the requirements of State Environment Protection Policy (Prevention and Management of Contamination of Land) and any associated standards referenced in the SEPP (as applicable) ⁶ .		Not applicable, no contaminant testing of soils was conducted.	C-OFI	Include in the next EMP and LRMP update undertaking a preliminary site investigation at completion of works and in accordance with the National Environment Protection Measure (Assessment of Site Contamination 1999 (as amended)
LRMP s.2.6 - Review	It will be necessary to review and revise the LRMP to ensure that it contains up to date and relevant land management practices during the course of the rehabilitation. The Quarry Manager and nominated management personnel will review the LRMP prior to commencement of each stage of the rehabilitation operations, and annually thereafter following the LRMP reports outlined above . All reviews will be documented, records maintained and both record of reviews and minutes of review meeting(s) will be retained. A summary of the outcomes of each review will be communicated to all relevant staff. A copy of the draft reviewed LRMP will be submitted to the Environmental Review Committee (ERC) for its comments before finalisation.	LRMP, ver3 July 2021. ERC Meeting Minutes Q1 2024	A review was undertaken by the ERC in Q1 2024 The latest version of the LRMP is dated July 2021 and was approved for issue by the Cardinia Shire Council on 24 August 2022. This timing sequence makes it impossible for the Plan to be reviewed, approved and issued for use annually. Holcim and the relevant stakeholders should together agree on a review frequency that best meets the environmental requirements for managing rehabilitation of the site and then formulate, agree on and commit to a review and approval timeline that enables that frequency to be met.	C-OFI	Refer to recommendation in EMP section 8.3 Variation
LRMP s.4.0	Operational Management Strategies – Objectives The purpose of these strategies is to provide a practical system for the ongoing management of the site. They are used to achieve the following objectives: <ul style="list-style-type: none"> To ensure that vehicles entering or leaving the site do not contaminate or spread weed seeds to either this site or to other properties; To conserve the existing conservation areas. 	Refer to comments below	Refer to comments below		
s.4.1 - Vehicle Mgt	Vehicles working exclusively within the extractive limit area, do not have to be inspected or washed down. Machinery, vehicles and equipment in the following recommendations refers to equipment used during: <ul style="list-style-type: none"> Rehabilitation works / clearing / farm operations. Vehicles involved in land management. (Patrolling tracks, tractors and farm equipment). 	Refer to comments below	Refer to comments below		

⁶ Note that all SEPPs have been revoked. Soil testing results must be evaluated in accordance with applicable current EPA requirements.

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s.4.1.1 - Vehicle Inspection	<ul style="list-style-type: none"> Inspection of machinery and vehicles coming from infested or unknown areas Determine inspection requirements for vehicles, machinery and equipment moving between jobs, districts Request that all contract vehicles and machinery are inspected prior to arrival on site Develop inspection procedures and locations to suit industry and environmental requirements Establish and maintain a checklist for vehicles, machinery and equipment inspected. 	HSE PROCEDURE - HYGIENE PROCEDURES_0235, 30/01/23 (Naturelinks); HSE Daily Inspection checklist (samples sighted). HSE Exit Inspection checklist (samples sighted)	Naturelinks use daily inspection and outgoing checklist for all vehicles working on site – examples sighted.	C	
s.4.1.2 - Clean Down of Machinery, Vehicles and Equipment	<ul style="list-style-type: none"> Determine appropriate cleaning practices for vehicles, machinery and equipment moving between jobs, districts Clean down machinery, vehicles and equipment from contaminated or unknown areas in accordance with established practices above, prior to arrival on site Clean down all machinery before departing site, at an on-site clean down facility Clean down facilities away from water courses, in an area that can be monitored for future germination are available at the site workshop. Avoid moving machinery in wet conditions where clay removal is difficult Develop work practices which avoid contamination of vehicles and machinery and prevent the spread or introduction of additional weed seeds. Ensure contractors conform to these practices Develop remedial action plans for controlling isolated weed outbreaks that occur within the work project area. 	As above	As above – forms indicate whether cleaning has occurred.	C	
s.4.1.3 - Use of Public Roads and Pathways	Where public roads and pathways are used, the Rehab Manager shall ensure they are maintained free of earth, rock or other materials that may fall from plant and equipment. All such material dropped onto public roads and pathways shall be properly removed and cleared.	Observation	Roads were observed to be free of debris.	C	
s.4.1.4 - Public Safety	The Rehab Manager shall ensure adequate provision is made for the safety of the public by providing suitable temporary barriers, fencing, ramps, warning signs, lighting and any other protective devices at all locations of potential risk. All necessary measures shall be taken to protect the health of persons on or within the vicinity of the site from conditions that are or may be dangerous to	Observation; EPA Waste Records. Sighted summary of monthly spraying program (Naturelinks)	No public access to the site. Perimeter gates and fencing observed appeared to be intact and locked. There is a significant buffer distance to surrounding neighbours. Holcim advises that Naturelinks personnel do not mix pesticides or dispose of residues or rinse water at the site. Holcim contractor (JE) makes up herbicide spray on site. No residue disposal or rinsing of equipment occurs on site. Herbicide containers are stored in enclosed shipping container (sighted) and disposed of as Notifiable Priority Waste.	C	

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	health, including the noxious effect of dust, fumes, or other hazards.				
4.2 - Topsoil Scraping and Stockpiling	Existing site topsoil that is to be re-used on site shall be stockpiled within the works boundary, in an area that will not be subject to traffic or other compaction. The stockpile is not to be located on areas of native vegetation to be retained, or within the drip-line of existing trees. Consideration should be given to bulkage factor, settling and some natural spreading of the topsoil into adjacent areas. The stockpile will be limited to <2m high.	Observation	Topsoil storages observed. No stockpiles were observed to be stored on areas of native vegetation. Topsoil from a stripping campaign on the NW face was relocated to the SW face for progressive rehabilitation.	C	
s.4.3 - Weed and Vermin Control	A weed control program will be implemented focussing on noxious weeds utilising a combination knock-down and pre-emergent herbicide. Noxious weed eradication in the area to be planted will be an ongoing requirement. During the plant establishment and maintenance phase, weeds will be kept clear of individual plants through the use of a mulch ring and spot spraying. The mulch shall be located within a diameter of 1m of tree seedlings. (further details in LRMP) Records will be kept to monitor the location, type and extent of all weed infestation. Used as a reference, these records can be used over time to establish the most appropriate and effective means of control for this site.	Weed control records (sample of Holcim Weekly Environmental Worksheets); Naturelinks HSE Daily Inspection Checklists (sample sighted). Observation.	Weed spraying is done by Naturelinks and Holcim solo contractor (working separate locations) and was observed during the audit. Spraying program is summarised in the 2023 rehabilitation report. Locations are recorded and mapped by latter, described in general terms by the former, based on the names of the various rehabilitation areas. Nominated weeds are targeted. Records are maintained of areas treated for weed infestation. Evidence of dead weeds noted confirming mitigation activities.	C	
s.4.3.1 - Herbicide Use	Any areas to be planted, which have been colonised by noxious weed species, should be herbicide treated with a non-residual knock-down herbicide at a minimum of twice prior to planting. Where it has been shown that a residual knock-down herbicide is more effective than non-residual herbicide, justification of its use must be provided to the Rehab Manager prior to use. Spraying of herbicides is not recommended near drainage lines. It is recommended that cut and paint methods be used on woody weeds in these areas. NOTE: The application of herbicides must be undertaken by a contractor or trained quarry personnel with a valid licence, Agricultural Chemical Users Permit (ACUP) as required, and in accordance with the manufacturer's recommendations for concentration of herbicide and frequency of application.	Andrew Clarke (ChemCert Accreditation issued 24/2/22); Jordan Harry ChemCert Accreditation issued 25/03/22; Oscar Jamieson ChemCert Accreditation issued 26/06/28; Dylan Burnet ChemCert Accreditation issued 21/04/27	Naturelinks' certifications checked for currency. Also sighted safety data sheets (SDSs) for a variety of Herbicides including Weedmaster, Kamba M, BS 1000, Conquest Maca 600, and Garlon 600	C	

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s.4.4 - Existing Vegetation Mgt	Aside from control of weed species as listed above, maintenance should include: <ul style="list-style-type: none"> Monitoring health of retained and planted vegetation and checking for pests and diseases, Treatment of disease or other infestation in vegetation, as necessary and as approved in consultation with DSE, and Control of pest animal species. (see LRMP for further specific details of management measures)	Mt Shamrock Rehabilitation Report, 2023 (Naturelinks); observation.	These measures are addressed and managed by Naturelinks.	C	
s.4.5 - Seed Collection	Seed collection from on-site indigenous vegetation is to be undertaken by a qualified specialist in indigenous revegetation. Collected seed will be supplemented by seed collected off-site. Supplementary seed must be sourced locally and be collected in accordance the necessary permits. (See LRMP for further specific details regarding seed collection.)	Mt Shamrock Rehabilitation Report, 2023 (Naturelinks)	Plants currently being bought from nursey. All seeds and tube stock are sourced locally with native grass seeds from species suited to the environment are sourced from local provenance.	C	
s.4.6 - Topsoil Spreading	Existing site topsoil, sourced from onsite stockpiles established prior to excavation, will spread over the quarry floor to a minimum depth of 200mm to provide a growing medium for indigenous vegetation and exotic grasses. Timing is to be determined to maximise the viability and germination of the indigenous seed collected and minimise weed invasion.	Mt Shamrock Rehabilitation Report, 2023 (Naturelinks); observation; photographs.	Progressive Rehabilitation is occurring on site, using topsoil spread from stockpiles at the site or 2023 stripping campaign of NW face.	C	
s.4.7 - Hydro-Seeding	Hydro-seeding or other soil stabilisation/seeding/mulching methods should be undertaken by a qualified specialist in indigenous revegetation, in consultation with Landscape Contractors. Timing is to be coordinated with the spreading of topsoil, to maximise the viability and germination of the indigenous seed collected and minimise weed invasion.	Mt Shamrock Rehabilitation Report, 2023 (Naturelinks); observation.	Naturelinks engage contractor to hydroseed new areas with sterile grasses to ensure stabilisation of applied topsoil and prevent weed generation. Typically take place during June/July.	C	
s.4.8 - Setting Out Works	Holcim shall be responsible for accurately setting out the works prior to breaking any soil and for checking the works in progress.	Monthly reports (Naturelinks). Quarterly ERC Meetings	Monthly reports by Naturelinks indicate progress of rehabilitation works. Holcim advises that it regularly checks progress of works.	C	
s.4.9 - Fencing and Signage	A cyclone mesh fence is to be located at the perimeter of the proposed Works Authority Boundary. Signage is to be compliant with industry standards.	Observation; Photographs.	Fencing and signage in place.	C	
s.4.10 - Supervision	The Rehab Manager or nominated quarry staff shall be present at the site of works at all times. Nominated representatives shall have had experience in executing work equal in nature and magnitude to the work described in this Plan.		Holcim advises that its personnel are in daily contact with Quarry Manager and are regularly observing contractor works when in progress and after completion. Observed Quarry Manager in contact with Rehabilitation contractors during the audit. Naturelinks has a nominated contact person who has a supervisory role for the rehabilitation works. Drawings as specified have	C	

*Compliance ratings

C – Complies; C-OFI – Observation; opportunity for improving the management system and/or operational controls exists.

mNC – Minor non-compliance (minor actual or potential SHE impact, may be contained within site or have limited off site impact; documentation issue);

MNC – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);

NA – Not Auditable (see comments for reason why)

EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	Contractors shall designate in writing to the Quarry Manager the name of their approved representative who shall have authority to direct work and to whom site instructions will be given by the Quarry Manager or their nominee. Contractors shall also designate how they will have authority over any subcontractors, and who will issue instructions to any subcontractors. Contractors shall keep one full set of drawings and specifications on site at all times to be available for inspection by the Rehab Manager or his/her nominee, or Inspectors from authorities with jurisdiction over the works. The drawings shall be adequately protected to sustain the documents in a clear and readable form for the duration of the works.		been provided to Naturelinks. As indicated above, drawings need to be amended to more closely align with the revised LRMP text.		
s.4.11 - Cleaning Up	All equipment and debris will be removed from the site at the completion each stage of planting. The site shall be left tidy. During the implementation of planting piles of rubbish shall be removed leaving the site in a tidy condition at the end of each working day.	Observation	The rehabilitation work areas were observed to be tidy with all rubbish/vegetation waste removed.	C	
s.4.12 - Erosion Control	Areas susceptible to erosion will be treated with approved erosion control techniques. The specific technique will be dependent on site conditions but may include hydro-mulching, erosion control matting or other approved techniques.	Observation	No signs of significant erosion were observed.	C	
LRMP s.5.0	Ongoing & post-operations Maintenance Holcim shall continue to monitor and maintain the site; however, plant replacement will not be undertaken solely for visual screening reasons. The landscape will operate as a "natural" system and is expected to be self-sustaining, and similar to surrounding forest environments.	Refer to comments below			
LRMP s.5.0	Ongoing maintenance, monitoring and rectification will be carried out by, and under the direction of, the site Rehabilitation ("Rehab") Manager and will include (but not necessarily be limited to): <ul style="list-style-type: none"> ▪ Maintenance of the surface of site access tracks. ▪ Maintenance of all fences and signs. ▪ Pruning branches overhanging and imposing on access tracks. ▪ Monitoring and control of weeds as necessary, ensuring weed controllers have attended a DSE 'Farm Chemical User Course' or equivalent and have appropriate approvals. ▪ Monitoring health of retained and planted vegetation and checking for pests and diseases. 	Vegetation Monitoring Monthly reports (sample sighted); Naturelinks documentation (various, as cited above).	No change from previous audit. Maintenance currently occurring by Holcim personnel and through Naturelinks (as described above) during operational phase of quarry.	C	

*Compliance ratings

C – Complies; **C-OFI** – Observation; opportunity for improving the management system and/or operational controls exists.**mNC** – Minor non-compliance (minor actual or potential SHE impact, may be contained within site or have limited off site impact; documentation issue);**MNC** – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);**NA** – Not Auditable (see comments for reason why)

EMP SECTION	EMP REQUIREMENT – SUMMARY	AUDIT EVIDENCE	AUDITOR'S FINDINGS & COMMENTS	COMPLY*	RECOMMENDATION
	<ul style="list-style-type: none">▪ Monitoring stability of berms and berm walls.▪ Replant terrestrial planted areas which that have failed and provide significant gaps in the horizon line.▪ Future plantings will include Multi story / multi species to provide a more natural▪ Ecosystem.▪ Regrading necessitated by erosion and washouts.▪ Treatment of disease or other infestation in vegetation as necessary and as approved in consultation with DSE.▪ Control of pest animal species.				
EMP s.1.4.2	At the completion of all quarrying activities, the site is to be reviewed to ascertain plant losses. Replanting as part of the ongoing monitoring and maintenance is to continue for a period of 12 months after completion of extraction after which the planting will rely on natural regeneration.)		Not applicable at this time, quarrying activities are expected to continue for a number of years.	NA	

*Compliance ratings

C – Complies; C-OFI – Observation; opportunity for improving the management system and/or operational controls exists;

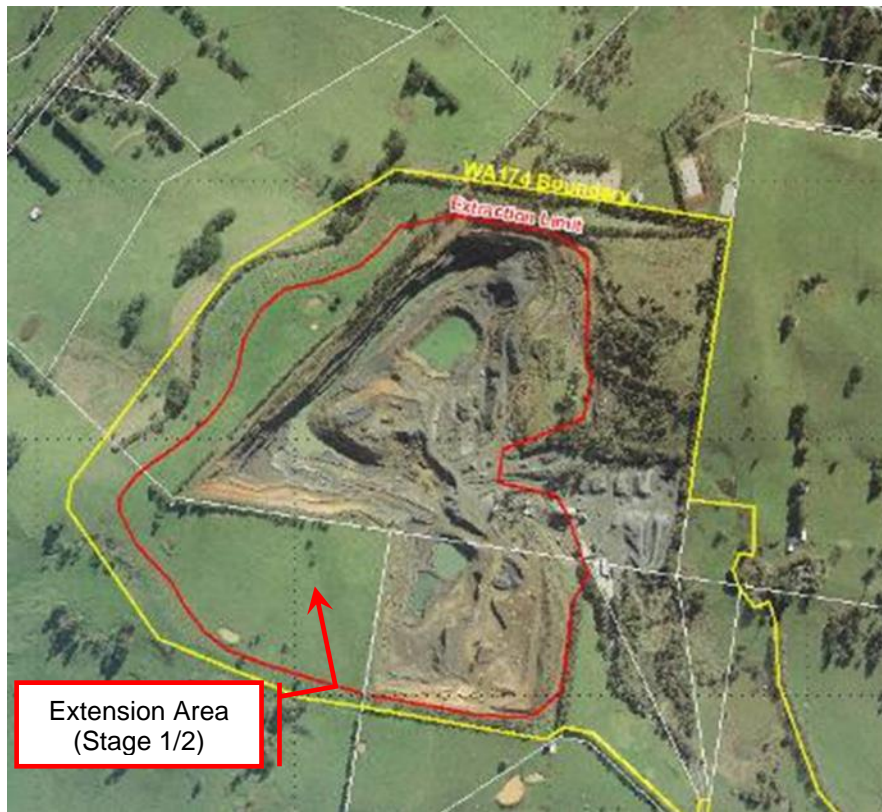
mNC – Minor non-compliance (minor actual or potential SHE impact, may be contained within site or have limited off site impact; documentation issue);

MNC – Major non-compliance (potential or actual significant offsite impact, and/or legal compliance issue);

NA – Not Auditable (see comments for reason why)

APPENDIX 2 – HISTORICAL AERIAL PHOTOGRAPH

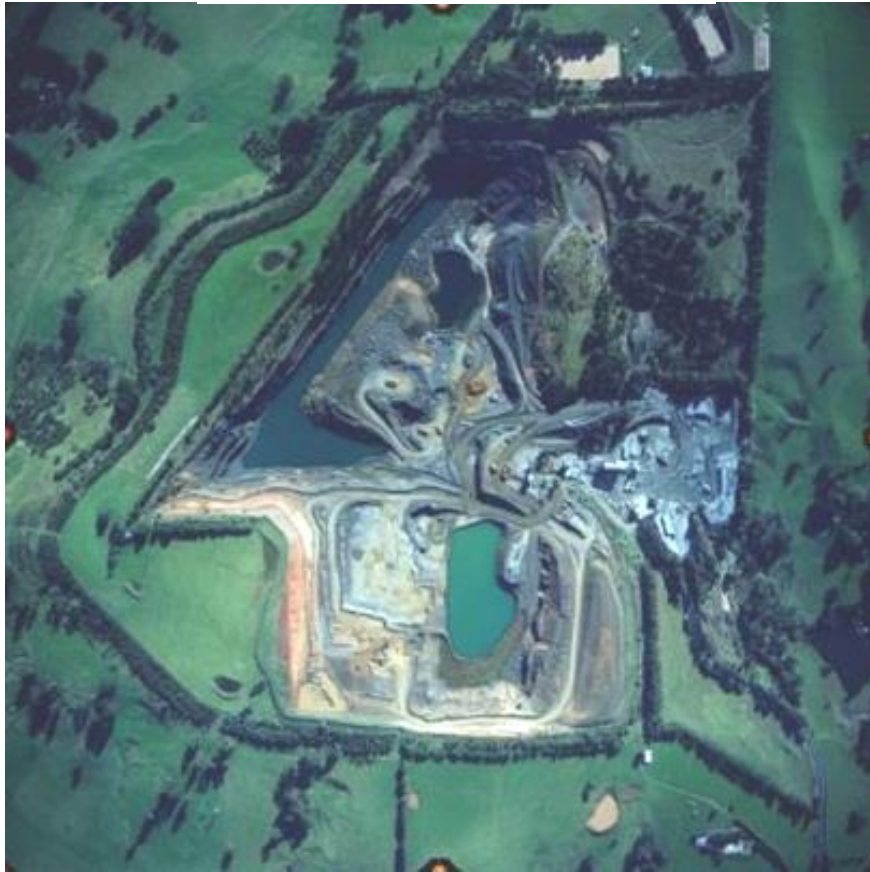
PHOTOGRAPH 1: BEFORE EXTENSION (PRIOR TO 2008)



PHOTOGRAPH 2: JANUARY 2010



PHOTOGRAPH 3: MAY 2011



PHOTOGRAPH 4: APRIL 2014



PHOTOGRAPH 5: DECEMBER 2015



PHOTOGRAPH 6: DECEMBER 2016

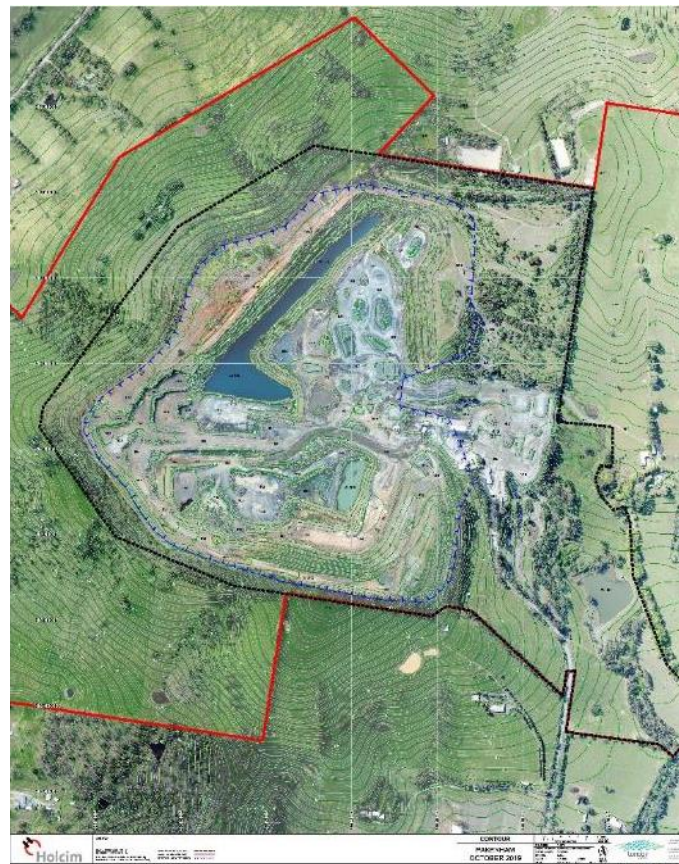




PHOTOGRAPH 7: OCTOBER 2017 (ABOVE). NET GAIN OFFSET AREAS ARE SHOWN OUTLINED IN YELLOW. FOR COMPARISON, THE PHOTO OPPOSITE IS FROM JAN 2014.



PHOTOGRAPH 8: FEBRUARY 2019



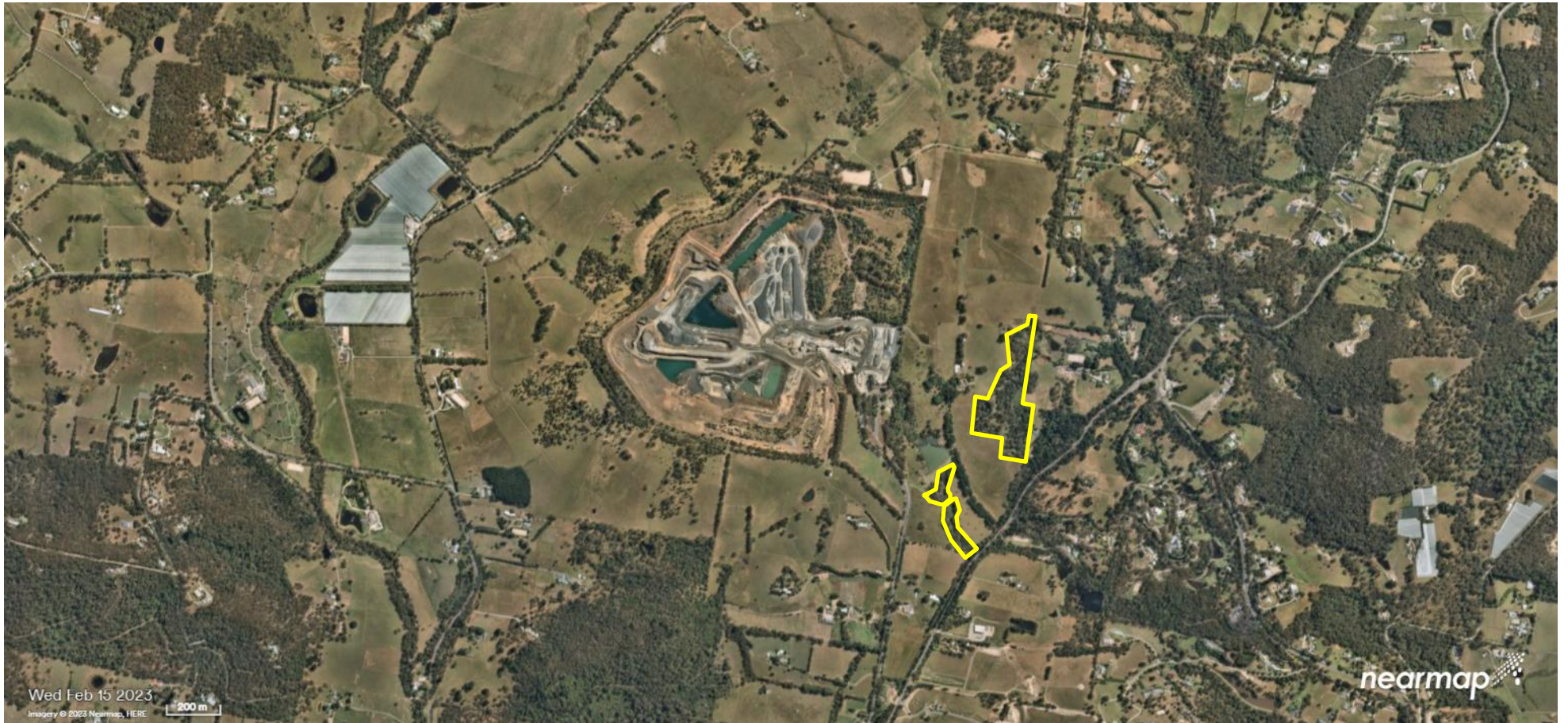
PHOTOGRAPH 9: OCTOBER 2019



PHOTOGRAPH 10: DECEMBER 2020 (NET GAIN OFFSET AREAS SHOWN WITH YELLOW BORDERING)



PHOTOGRAPH 11: DECEMBER 2021 (NET GAIN OFFSET AREAS SHOWN WITH YELLOW BORDERING).



PHOTOGRAPH 12: FEBRUARY 2023 (NET GAIN OFFSET AREAS SHOWN WITH YELLOW BORDERING).



PHOTOGRAPH 13: FEBRUARY 2024: NET GAIN OFFSET AREAS SHOWN WITH YELLOW BORDERING



PHOTOGRAPH 14: TRAFFIC MANAGEMENT PLAN 2022