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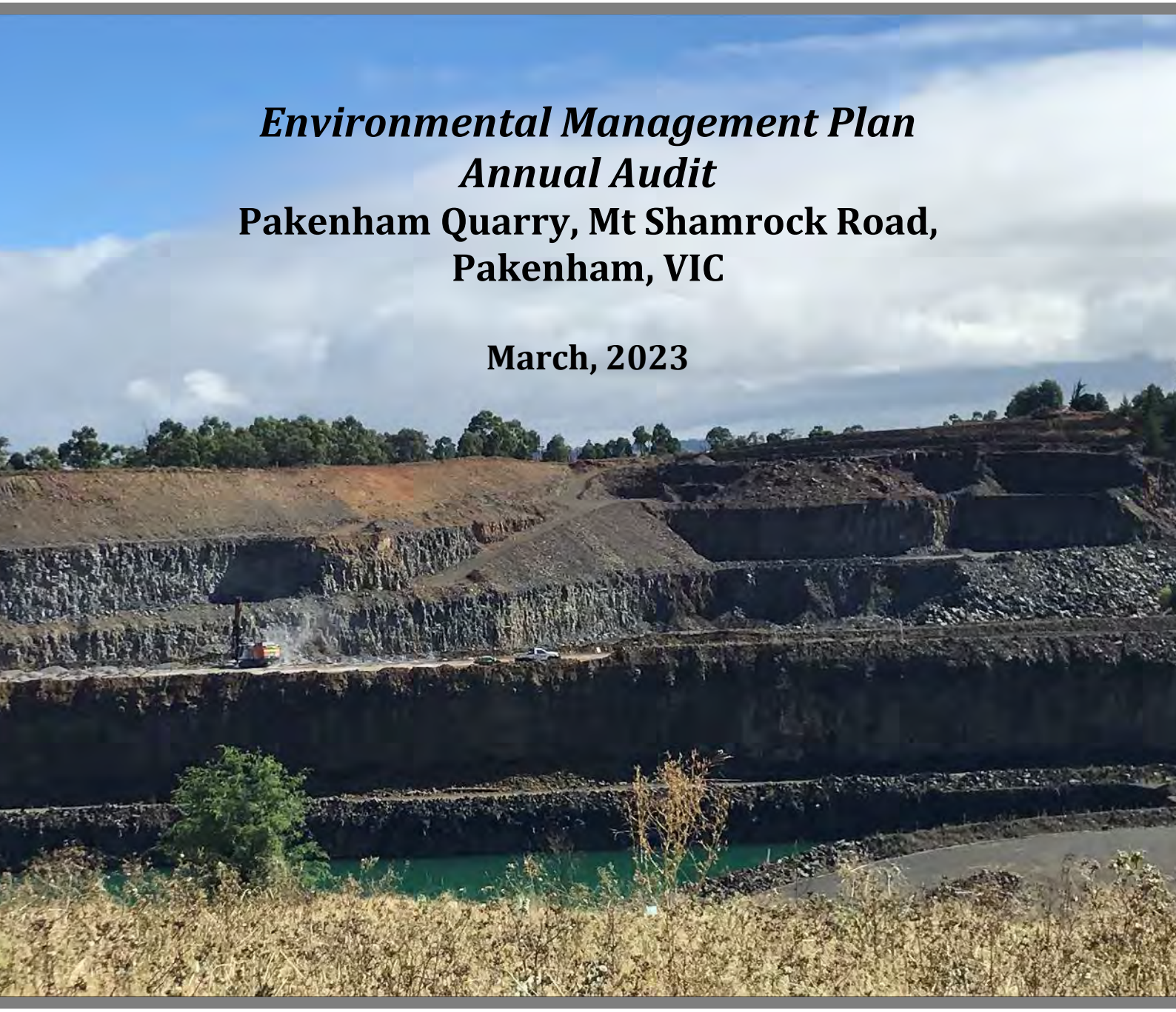
APPROVALS - SUSTAINABILITY - COMPLIANCE



Environmental Management Plan Annual Audit

Pakenham Quarry, Mt Shamrock Road, Pakenham, VIC

March, 2023

for

Holcim Australia Pty Ltd

DISCLAIMER

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); and
- 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.

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DOCUMENT REVISION HISTORY

Revision No.	Summary of Amendments	Reviewed by	Issued by	Issue Date
Draftv3		S Jenkins	S Leverton	21 Apr 2023
R0			S Leverton	1 May 2023

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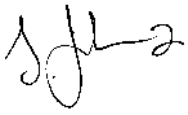
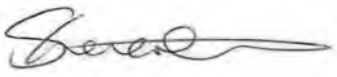
General Information

Audit Title:	Environmental Management Plan Annual Audit
Site Office:	Mt Shamrock Rd, Pakenham
Site/ Dept. Manager:	Leigh Elliott, Quarry Manager
Audit Conducted By (Environmental Specialists)	
Lead Auditor:	Stephen Jenkins, Director, EnviroRisk Management
Signed:	
Auditor:	Simon Leverton, Senior Consultant, EnviroRisk Management
Signed:	
Date Audit Completed:	3rd March, 2023
Client Representative	
Name:	Leigh Elliott
Title:	Quarry Manager, Holcim
Audit Personnel	
Interviewees/Attendees:	Leigh Elliott – Quarry Manager Nathan Thomas – Operations Manager Andrew Clarke - Site Supervisor, Naturelinks
Report Distribution	
Leigh Elliott	Quarry Manager, Holcim
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Executive Summary

This report describes the outcome of the annual independent Environmental Management Plan (EMP) audit conducted at Holcim's Mt Shamrock Road Quarry, Pakenham. 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 being approved by the Shire of Cardinia and coming into effect on 24th August 2022.

Auditee: Holcim Australia Pty Ltd – Mt Shamrock Road Quarry

Audit Scope: A detailed evaluation of compliance by Holcim with the requirements of the '*Mt Shamrock Quarry – Environmental Management Plan, revision 3: 24th August 2022'*.

The audit comprised the conducting of interviews with a range of Holcim and other 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 appended to this report.

Recommendations for action have been prepared together with a list of the specific EMP nonconformities that were identified during the audit.

Audit Findings and Conclusions:

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. The following commendable items were noted:

- No justified complaints relating to environmental amenity were received/recorded;
- Recommendations from the previous audits have been implemented, or in one instance appropriately deferred until this year;
- 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 all stakeholders (as represented in the ERC), including residential neighbours;
- Waste management is greatly improved through good segregation practices and a major reduction in the equipment graveyard contents;

- Progressive replacement and update of the dust particulate monitoring equipment in response to regular outages that resulted in data gaps during the audit period;
- Environmental quality monitoring data for dust, noise and water were substantially in compliance with respective limits, with some relatively minor exceptions; and
- As a result of the above the objectives and targets laid out in the EMP were met for all sections except Water.

Four (4) minor nonconformities were identified and are set out in Table 1 of this report (reproduced below). Eighteen (18) observations were made leading to recommendations to improve environmental management at the site. Table 2 at the end of section 7 of this report shows that the recommendations for correcting all the nonconformities identified in the previous audit were implemented.

Table 3 of this report (reproduced below) 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 the outcomes from the previous eleven audits.

From examining evidence provided to us 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 4 (reproduced below) sets out our recommendations for addressing the nonconformities and implementing the improvement opportunities identified in this audit.

EMP Ref.	Rating	Nonconformity
B-2.1.3	**mnc**	The site weather station was not functioning for extended periods during the year 2022-23.
B-2.4.2	**mnc**	Three (3) turbidity exceedances were recorded during the audit period, the highest being approx. 80 NTU (Licence Limit 30).
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 & Rehabilitation Report, 2005 (ref. 4).
C-LRMP, 2.6	**mnc**	The LRMP is not being reviewed annually as specified in this section of the Plan.

Table 1 – Nonconformities

EMP Section	2009-10		2010-11		2011-14		2014-15		2015-16		2016-17		2017-18	
	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target
Air Quality	Achieved	Partially met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Noise	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Blasting	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Not met	Achieved	Met	Achieved	Met	Achieved	Met
Surface Water, Drainage, and Groundwater	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Not met
Slope Stability	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Greenhouse Gas Emissions	(not established)	Partially met	Achieved	Partially met	Achieved	Partially met	Achieved	Not met; to be revised	Achieved	Partially met	Achieved	Not met	Achieved	Met
Traffic Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Net Gain	Progress towards achievement	Met, however progress too slow	Progress towards achievement	Met	Progress towards achievement	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Cultural Heritage	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Fire Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Water Conservation	Achieved	Met	Achieved	Met	Achieved	Met	N/A[#]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Waste Management	Achieved	Not met	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Met	Achieved	Not met
Housekeeping/Preventative Maintenance	Achieved	(not established)	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Storage & Handling	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Donazzan's Dam Integrity	Achieved	Met	Not fully achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Rehabilitation & Vegetation	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met

[#] N/A – no longer applicable

Table 3 – Objectives and Targets

EMP Section	2018-19		2019-20		2020-21		2021-22		2022-23	
	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target
Air Quality	Achieved	Met	Achieved	Met	Achieved	Partially Met	Achieved	Met	Achieved	Met[%]
Noise	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Blasting	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Surface Water, Drainage, and Groundwater	Achieved	Met	Achieved	Met	Achieved	Not met	Achieved	Met	Achieved	Not Met
Slope Stability	Achieved	Met	Achieved	Met	Achieved	Achieved	Achieved	Met	Achieved	Met
Greenhouse Gas Emissions	Achieved	Not met	Achieved	Not met	Achieved	Not met	Achieved	Not met	Achieved	Met
Traffic Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Net Gain	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Cultural Heritage	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Fire Management	Achieved	Met	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	N/A	N/A
Waste Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Under Revision
Housekeeping/Preventative Maintenance	Achieved	(not established)	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Storage & Handling	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Donazzan's Dam Integrity	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Rehabilitation & Vegetation	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met

[#] N/A – no longer applicable; [%] based on incomplete dataset

Table 3 (continued) – Objectives and Targets

Ref.	Recommendation
B-2.1.3 Air Quality	1. Rectify or replace the weather monitoring equipment at the site so that it is reliably recording and logging the required data at all times.
2.4.2 Surface Water	2. Investigate and then implement effective measures to cease the discharge from the site of sediment and/or colloid-contaminated water that causes exceedance of Licence limits.
1.2 – Accompanying Drawings	3. Revise the attached drawings to the LRMP so that they accurately represent the current rehabilitation program and its desired outcomes.
2.6 - Review LRMP	4. 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.
Ref.	**Improvement Opportunity**
s.3 Training & Awareness	i. Complete, issue and implement the Work Procedure being developed for waste management training.
	ii. Conduct an annual refresher induction for relevant Holcim employees, examining particular issues (beneficial and detrimental) that occurred over the preceding year as well as a reminder of the key environmental aspects of the site, highlighting any changes from the preceding year.
s.8.3 EMP Variation	iii. Prepare an EMP variation to pick up on items not corrected in the most recent 5 year review (e.g. some of the changes to EPA's legislation).
s.B, 2.1.3 Air Quality	iv. Some dirt is being tracked onto the roadway at the truck pull-over area outside the main gate. This should be investigated as to whether this was a 'one off' situation or a consistent problem, and rectified if the latter.
	v. Continue progressively replacing air monitors with new machines as a priority. Take any other necessary preventative measures to reduce the likelihood of data gaps occurring in future and respond to equipment outages, e.g. refurbishment or replacement of weather monitoring station (see Rec. 1), using BoM data from nearby representative monitoring station to cross-check site data.
s.B, 2.2.3 Noise	vi. Revise the sub-sections referring to fortnightly noise monitoring to incorporate the following methodology. All monitoring at resident locations should occur initially by measuring the 5 min L_{Aeq} (the 'noise level estimate'), with the measurer noting whether quarry noise is audible. Where a location registers a level estimate within 1 dB of the appliable EMP limit on two successive occasions where quarry noise is clearly audible, an expert with qualifications and experience in environmental noise measurement should be engaged to assess the noise level at that location in accordance with the published EPA Vic methodology current at the time to determine compliance with the EMP limit.
s.B, 2.4.3 Surface Water	vii. Where a distinction between the contributions of paddock runoff and quarry water needs to be made to help investigate inputs and sources, Dam water discharge should be field-tested at the end of the discharge pipe from the Dam (located at the toe of dam wall), not within the Dam itself.

	viii.	Holcim should implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report of 15 March, 2023.
	ix.	Holcim advises that it plans to install visual level gauges in each quarry pit/dam (northern and southern). These should be calibrated by survey so water levels can continue to be recorded as R.L.s (AHD).
s.B, 2.5.3 Slope Stability	x.	The AECOM slope inspection letter report (Feb, 2023) makes a number of recommendations for remedial works to mitigate the minor movements and other land stability issues observed. These recommendations should be entered into the ICARE 'action items' system and tracked to close out.
s.B, 2.7.1 Traffic Management	xi.	Where early morning truck queuing adversely impacts local amenity, advisory measures such as signs at the bottom of Mt Shamrock Road should be considered and implemented in consultation with the responsible authority.
s.B, 2.10.3 Fire Management	xii.	Holcim should update the smoke alarms and detectors inspection checksheet to remove reference to detectors with no remote indication.
s.B, 2.12.3 Waste Management	xiii.	As part of the EMP variation referenced in iii above, Holcim should draft appropriate waste management target(s) and submit to ERC for comment, and Council for approval, as provided for in s.8.3 *EMP Variation* and Appendix 3 of the EMP, 2021.
	xiv.	Confirm with the priority waste removal contractor whether comingling of grease and silicon cartridges is acceptable practice. If not and the latter is a contaminant, toolbox relevant personnel on correct segregation of these items and put signs on containers to reinforce the message.
	xv.	As part of the EMP variation referenced in iii above, Holcim should revise the annual waste survey requirements of the EMP to a form of words that – a. 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, and b. provides a means of achieving the waste management targets.
s.B, 2.15.3 Donazzan's Dam	xvi.	Progress all outstanding recommendations from the 5 yearly Dam integrity report that were contingent on completion of the consequence category assessment.
s.C, 2.4 LRMP Non-conformance	xvii.	Investigate and implement actions to mitigate the impacts of kangaroos and deer on the rehabilitation works.
s.C, 4.9 LRMP Fencing & Signage	xviii.	The quarry boundary fence should be fixed if practical and effective to prevent feral animal damage and undermining.

Table 4 – Recommendations & Improvement Opportunities

1.0 BACKGROUND

The Holcim Mt Shamrock Road 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 18th January, 2008. It has since been reviewed and revised twice by Holcim, with the latest and current version being approved by the Shire of Cardinia and coming into effect on 24th August 2022[1].

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. The land forming the extension is in the south west corner of the quarry, as shown in photograph 1.

This report describes the outcome of the annual audit of the EMP, conducted as specified in section 8.1 of the Plan. Holcim advised that it provided the Environmental Review Committee (ERC) with a copy of EnviroRisk's Audit Plan for comment prior to the audit.

2.0 OBJECTIVES

The objectives of the audit are to evaluate the extent of implementation of the EMP by Holcim over the audit period (Feb 2022 to Feb 2023), 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 & 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 '*Mt Shamrock Quarry – Environmental Management Plan, revision 3: 24th August 2022'*. Specifically, the scope includes an examination of:

- the actions taken in implementing the EMP;
- the compliance with prescribed limits; and

[1] The audit has been progressed against this revised version of the EMP whilst recognising that the revised EMP was ratified midway into the audit period.

- 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 two day period 1st to 2nd March, 2023. Prior to this a selection of audit evidence (in electronic format) was requested from Holcim for review by the auditors.

4.0 AUDIT TEAM

Stephen Jenkins - Project Director & Lead Auditor

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*).

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.

Stephen's role in this project was as Audit Leader, providing expert input and direction, and quality-assuring deliverables through peer review.

Simon Leverton – Auditor (systems, water & waste specialist)

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.

Simon 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. Areas shaded grey were not included in the audit as these criteria have either expired or were settled in previous audit(s).

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) in the far right column. Auditor comments were recorded in the middle column.

For each commitment, the audit team has determined whether the actions and their timing fully satisfy the commitment. If so, **conformity (C)** is indicated in the fourth column. If not, a nonconformity is recorded as either:

- **minor** (**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, or
- **major** (**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.

Where an opportunity for management improvement is identified, an **observation (O)** is recorded. 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 **not auditable (NA)** 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 and shown in Appendix 3.

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 s.7.6 and Table 3.

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:

6.1 Audit Program (Schedule)

Upon engagement EnviroRisk prepared a draft Audit Program and provided it to Holcim for review and comment. Holcim circulated the program to the ERC for comment in December, 2022. No comments were received from Holcim in relation to the program.

6.2 Pre-Audit Initial Evidence 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.

6.3 Site Component

The site component commenced with a brief opening meeting with the Quarry Manager and other relevant personnel. Arrangements for the audit were confirmed as per the Audit Program.

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 sampling point, Net Gain Offset areas, northern quarry boundary and Donazzan's Dam. A second site inspection was conducted on day 2 that included the maintenance area, crushing plant, cement mixing and silo, and settlement ponds.

Meetings, discussions, interviews, sighting of evidence and completion of the audit protocol occurred in the site office over days 1 and 2. Holcim personnel present for some or all of this time were Nathan Thomas (Operations Manager) and Leigh Elliott (Quarry Manager). The auditors also reviewed the outcomes and recommendations of the previous audit report (EnviroRisk, 2022).

A closing meeting was held with the Quarry Manager and Operations Manager by video conferencing on day 3, 3rd 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).

6.4 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 & 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. The following commendable items were noted:

- No justified complaints relating to environmental amenity were received/recorded;
- Recommendations from the previous audits have been implemented, or in one instance appropriately deferred until this year;
- 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 all stakeholders (as represented in the ERC), including residential neighbours;
- Waste management is greatly improved through good segregation practices and a major reduction in the equipment graveyard contents;
- Progressive replacement and update of the dust particulate monitoring equipment in response to regular outages that resulted in data gaps during the audit period;
- Environmental quality monitoring data for dust, noise and water were substantially in compliance with respective limits, with some relatively minor exceptions; and
- As a result of the above the objectives and targets laid out in the EMP were met for all sections except Water.

Four (4) minor nonconformities were identified and are set out in Table 1 at the end of this section. Eighteen (18) observations were made leading to recommendations to improve environmental management at the site.

Table 2 shows the implementation status of the recommendations to correct nonconformities from previous EMP audits. All recommendations have been closed out.

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

7.2 Air Quality Monitoring

Holcim has continued to experience technical problems with its air quality monitoring network, particularly the four sets of continuous dust monitoring equipment at locations 1, 3, 4 and 6, and the wind direction and speed monitoring equipment (weather station) at the site office. This has led to extended periods where either one or more of the dust monitors has not been working, or a malfunction at the site office weather station has led to continuous dust monitoring data not able to be used for its intended purpose, i.e. to warn site management of dust generation occurring at levels of concern while it is actually happening (in 'real' time). Any compromising of this system of warning and reactive management to potentially noncomplying dust emission from the quarry site represents a deficiency in environmental controls. In recognition of this Holcim advises that it has been progressively replacing the continuous dust monitoring equipment with new equipment. We have recommended that this be completed as a priority. We have also recommended that the equipment upgrade include the weather station at the site office as this is a key component of the continuous dust monitoring system.

7.3 Surface Water Quality Management & Monitoring

The quarry has reported three (3) Licence condition breaches to EPA during the audit period. These were for turbidity concentrations in excess of the Licence limit measured at the Licence discharge point at the V-notch weir (Monitoring Station W, Figure 1, *Environmental Monitoring* Stations, EMP Appendix 11). EPA has acknowledged these reports and the actions Holcim has taken to identify their cause and in one case mitigate the chance of a repeat breach in the short term.

The water that discharges to the environment at the EPA sampling location comprises surface water run-off from adjacent farm paddocks and vegetated land and quarry water when it is being discharged from Donnazan's Dam.

The following is a summary of the breaches. The Licence limit for turbidity is 30 Nephelometric Turbidity Units (NTU). Licence condition OL_G2 requires the Licence holder to notify EPA immediately (taken to be within 24 hours) of any breach of a Licence condition.

- 14 June – discharge tested (33 NTU) & reported to EPA same day. Considered likely to come mainly from run-off downstream of Dam as Dam water was tested as 20 NTU;
- 26 August (Friday) – discharge tested (39 NTU), reported to EPA same day, re-tested on 29 August (less than 30 NTU). Site had not been pumping from Dam since 24 August so very likely to be due to downstream runoff during rain;
- 4 November (Friday) – discharge tested (77 NTU), retested on 5 November (61 NTU), reported to EPA 5 November.

Arguably the June turbidity measurement was not a breach as it was within the measurement error of the field equipment. We have therefore made recommendations in relation to the following:

- Where a distinction between the contributions of paddock runoff and quarry water needs to be made to help investigate inputs and sources, Dam water discharge should be field-tested at the end of the discharge pipe from the Dam (located at the toe of dam wall), not within the Dam itself; and
- The site should investigate and implement effective measures that will cease the discharge of surface water from the site that exceeds the EPA Licence limits.

7.4 Waste Management & 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 & 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. We have therefore recommended that Holcim seeks to amend this through the process set out in s.8.3 EMP Variation. After discussion with quarry personnel on this and the related EMP requirements for an annual waste survey to be conducted and for targets to be developed from this, and based on sighting evidence presented of current waste management practices at the site, we have also recommended that the waste target(s) and annual waste survey be reviewed and revised together and integrated in a way that reduces waste-to-landfill to the least amount practicable, whilst dealing with other wastes in a way that best responds to the principles of the waste hierarchy and the circular economy principles of sustainable resource management.

7.5 Landscape Rehabilitation Management

It was noted that the drawings attached to the revised version of the Landscape and Rehabilitation Management Plan (LRMP) had not themselves been revised since first published in the ERM report of 2005 (reference 4). Since that time, and with many years of experience rehabilitating quarry faces, it was agreed that the approach to species selection for some areas needed to be changed and this was addressed in the 2015 update of the LRMP however these changes were not reflected in the attached drawings. A recommendation for the drawings to be revised and amended to address current conditions and approach has been made.

The LRMP requires that it be reviewed annually. Holcim has been unable to achieve this frequency due to the time taken for the revised draft document to navigate the approval process. It is therefore recommended that Holcim and the relevant stakeholders agree on a review frequency that best meets environmental best practice requirements whilst also enabling the review process to be completed within the agreed review timing period.

7.6 Objectives & Targets

Table 3 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 eleven audits. For the year 2022-23 all the objectives and targets specified in the EMP were met except for Surface Water, namely EPA Licence compliance. As detailed in s.7.4 above the Waste Management target(s) were entered in error.

Implementing the recommendations in this report should enable all objectives and targets to be met going forward.

EMP Ref.	Rating	Nonconformity
B-2.1.3	mnc	The site weather station was not functioning for extended periods during the year 2022-23.
B-2.4.2	mnc	Three (3) turbidity exceedances were recorded during the audit period, the highest being approx. 80 NTU (Licence Limit 30).
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 & Rehabilitation Report, 2005 (ref. 4).
C-LRMP, 2.6	mnc	The LRMP is not being reviewed annually as specified in this section of the Plan.

Table 1 - Nonconformities

EMP Ref.	Rating	Nonconformity	Recommendation	Status (March 2023)
2021-22				
B-2.6.2	mnc	Greenhouse gas emission reduction target of 3% was not achieved.	Progress with completing the re-routing of haul traffic within the quarry to achieve the expected approximate 50% reduction in haulage distance per tonne of material.	**Completed.**
B-2.12.3	mnc	E-waste is a priority waste and must be identified, collected and stored separately for removal by a suitably authorised contractor for treatment at a lawful place.	E-waste is a priority waste and must be identified, collected and stored separately for removal by a suitably authorised contractor for treatment at a lawful place.	**Completed.**
	mnc	Annual waste survey to establish the types, quantities and re-cycling/ re-use percentages for all site wastes was not completed.	Conduct an annual waste survey to establish all waste types, quantities and re-use/recycle percentages (by mass).	**Completed.**
	mnc	Quantifiable and achievable annual waste reduction targets for the site for each waste stream identified by the annual survey have not been set.	Set measurable and achievable waste reduction and diversion-from-landfill targets for each waste stream/type as identified in the annual survey.	**Completed.**
2020-21				
B-2.1.3	mnc	Dust deposition samples for three consecutive months were not retrieved from any of the sampling locations.	Document and implement contingency procedures in the event that the air quality monitoring contractor is unable to retrieve dust deposition samples at the specified intervals for transport to the laboratory for analysis.	**Completed.**

EMP Ref.	Rating	Nonconformity	Recommendation	Status (March 2023)
B-2.4.2	mnc	A number of pH and turbidity exceedances were recorded in samples taken at the EPA Licence discharge point during discharge of surface water from the site.	Undertake an investigation into the cause(s) of the turbidity and pH exceedances measured at the EPA Licence discharge point during discharge of surface water from the premises. Implement necessary controls and other measures as necessary to ensure Licence discharge limits are met at all times.	**pH probe replaced – levels have reduced since then. No exceedances recorded.**
B-2.4.2	mnc	The turbidity meter was found to be almost a year overdue for factory calibration, and standard turbidity and pH solutions are not being routinely used prior to conducting monthly water quality monitoring.	Document and implement a water quality monitoring procedure that includes instructions on the correct use and field calibration of water quality monitoring instruments. The procedure should align with EPA sampling guidelines and the instrument manufacturers' specifications.	**Completed.**
B-2.6.2	mnc	The site did not meet its annual greenhouse gas emission reduction target.	Investigate further measures that can be taken to achieve the annual greenhouse gas reduction target for the site. Include consideration of offsets such as carbon offset purchasing, and the sourcing of electricity from renewable generation.	**Completed.**

Table 2 - Progress and Status of Nonconformity Recommendations from Previous Two Audits

EMP Section	2009-10		2010-11		2011-14		2014-15		2015-16		2016-17		2017-18	
	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target	Objective	Target
Air Quality	Achieved	Partially met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Noise	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Blasting	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Not met	Achieved	Met	Achieved	Met	Achieved	Met
Surface Water, Drainage, and Groundwater	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Not met
Slope Stability	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Greenhouse Gas Emissions	(not established)	Partially met	Achieved	Partially met	Achieved	Partially met	Achieved	Not met; to be revised	Achieved	Partially met	Achieved	Not met	Achieved	Met
Traffic Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Net Gain	Progress towards achievement	Met, however progress too slow	Progress towards achievement	Met	Progress towards achievement	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Cultural Heritage	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Fire Management	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Water Conservation	Achieved	Met	Achieved	Met	Achieved	Met	N/A[#]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Waste Management	Achieved	Not met	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Not met, in progress	Achieved	Met	Achieved	Not met
Housekeeping/Preventative Maintenance	Achieved	(not established)	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Storage & Handling	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Donazzan's Dam Integrity	Achieved	Met	Not fully achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met
Rehabilitation & Vegetation	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met	Achieved	Met

[#] N/A – no longer applicable

Table 3 – Objectives and Targets

EMP Section	2018-19		2019-20		2020-21		2021-22		2022-23	
	Objective	*Target*	*Objective*	*Target*	*Objective*	*Target*	*Objective*	*Target*	Objective	Target
Air Quality	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Partially Met*	*Achieved*	*Met*	Achieved	Met[%]
Noise	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Blasting	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Surface Water, Drainage, and Groundwater	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Not met*	*Achieved*	*Met*	Achieved	Not Met
Slope Stability	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Achieved*	*Achieved*	*Met*	Achieved	Met
Greenhouse Gas Emissions	*Achieved*	*Not met*	*Achieved*	*Not met*	*Achieved*	*Not met*	*Achieved*	*Not met*	Achieved	Met
Traffic Management	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Net Gain	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Cultural Heritage	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Fire Management	*Achieved*	*Met*	*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*	N/A	N/A
Waste Management	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Under Revision
Housekeeping/Preventative Maintenance	*Achieved*	*(not establish-ed)*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Storage & Handling	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Donazzan's Dam Integrity	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met
Rehabilitation & Vegetation	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	*Achieved*	*Met*	Achieved	Met

[#] N/A – no longer applicable; [%] based on incomplete dataset

Table 3 (continued) – Objectives and Targets

8.0 CONCLUSIONS & RECOMMENDATIONS

From examining evidence provided to us 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). A small number of relatively minor items requiring attention were identified during the audit, and recommendations have been made for actions to address these. Opportunities for improvement arising from observations made during the audit have also been recommended.

Table 4 sets out our recommendations for addressing the nonconformities and implementing the improvement opportunities identified in this audit.

Ref.	Recommendation
B-2.1.3 Air Quality	1. Rectify or replace the weather monitoring equipment at the site so that it is reliably recording and logging the required data at all times.
2.4.2 Surface Water	2. Investigate and then implement effective measures to cease the discharge from the site of sediment and/or colloid-contaminated water that causes exceedance of Licence limits.
1.2 – Accompanying Drawings	3. Revise the attached drawings to the LRMP so that they accurately represent the current rehabilitation program and its desired outcomes.
2.6 - Review LRMP	4. 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.
Ref.	**Improvement Opportunity**
s.3 Training & Awareness	i. Complete, issue and implement the Work Procedure being developed for waste management training.
	ii. Conduct an annual refresher induction for relevant Holcim employees, examining particular issues (beneficial and detrimental) that occurred over the preceding year as well as a reminder of the key environmental aspects of the site, highlighting any changes from the preceding year.
s.8.3 EMP Variation	iii. Prepare an EMP variation to pick up on items not corrected in the most recent 5 year review (e.g. some of the changes to EPA's legislation).
s.B, 2.1.3 Air Quality	iv. Some dirt is being tracked onto the roadway at the truck pull-over area outside the main gate. This should be investigated as to whether this was a 'one off' situation or a consistent problem, and rectified if the latter.
	v. Continue progressively replacing air monitors with new machines as a priority. Take any other necessary preventative measures to reduce the likelihood of data gaps occurring in future and respond to equipment outages, e.g. refurbishment or replacement of weather monitoring station (see Rec. 1), using BoM data from nearby representative monitoring station to cross-check site data.
s.B, 2.2.3 Noise	vi. Revise the sub-sections referring to fortnightly noise monitoring to incorporate the following methodology. All monitoring at resident locations should occur initially by measuring the 5 min L_{Aeq} (the 'noise level estimate'), with the measurer noting whether quarry noise is audible. Where a location registers a level estimate within 1 dB of the appliable EMP limit on two successive occasions where quarry noise is clearly audible, an expert with qualifications and experience in environmental noise measurement should be engaged to assess the noise level at that location in accordance with the published EPA Vic methodology current at the time to determine compliance with the EMP limit.
s.B, 2.4.3	vii. Where a distinction between the contributions of paddock runoff and quarry water needs to be made to help investigate

Surface Water		inputs and sources, Dam water discharge should be field-tested at the end of the discharge pipe from the Dam (located at the toe of dam wall), not within the Dam itself.
	viii.	Holcim should implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report of 15 March, 2023.
	ix.	Holcim advises that it plans to install visual level gauges in each quarry pit/dam (northern and southern). These should be calibrated by survey so water levels can continue to be recorded as R.L.s (AHD).
s.B, 2.5.3 Slope Stability	x.	The AECOM slope inspection letter report (Feb, 2023) makes a number of recommendations for remedial works to mitigate the minor movements and other land stability issues observed. These recommendations should be entered into the ICARE 'action items' system and tracked to close out.
s.B, 2.7.1 Traffic Management	xi.	Where early morning truck queuing adversely impacts local amenity, advisory measures such as signs at the bottom of Mt Shamrock Road should be considered and implemented in consultation with the responsible authority.
s.B, 2.10.3 Fire Management	xii.	Holcim should update the smoke alarms and detectors inspection checksheet to remove reference to detectors with no remote indication.
s.B, 2.12.3 Waste Management	xiii.	As part of the EMP variation referenced in iii above, Holcim should draft appropriate waste management target(s) and submit to ERC for comment, and Council for approval, as provided for in s.8.3 EMP Variation and Appendix 3 of the EMP, 2021.
	xiv.	Confirm with the priority waste removal contractor whether comingling of grease and silicon cartridges is acceptable practice. If not and the latter is a contaminant, toolbox relevant personnel on correct segregation of these items and put signs on containers to reinforce the message.
	xv.	As part of the EMP variation referenced in iii above, Holcim should revise the annual waste survey requirements of the EMP to a form of words that – a. 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, and b. provides a means of achieving the waste management targets.
s.B, 2.15.3 Donazzan's Dam	xvi.	Progress all outstanding recommendations from the 5 yearly Dam integrity report that were contingent on completion of the consequence category assessment.
s.C, 2.4 Non-conformance	xvii.	Investigate and implement actions to mitigate the impacts of kangaroos and deer on the rehabilitation works.
s.C, 4.9 Fencing & Signage	xviii.	The quarry boundary fence should be fixed if practical and effective to prevent feral animal damage and undermining.

Table 4 – Recommendations & Improvement Opportunities

9.0 REFERENCES

1. EPA Victoria, Legislation, guidelines, etc (various).
2. EnviroRisk, 2022. Environmental Management Plan Annual Audit, Pakenham Quarry, Mt Shamrock Road, Pakenham, VIC, issued 11th May, 2022.
3. Mt Shamrock Quarry Environmental Management Plan, version 3, August 2015 and associated documents.
4. Mt Shamrock Quarry (Pakenham) - Proposed Work Authority Extension, Landscape and Rehabilitation Report, February, 2005.
5. AS/NZS ISO14001:2016 *Environmental management systems.*
6. AS/NZS ISO19011:2019 *Guidelines for auditing management systems.*
7. Reportable priority waste | Environment Protection Authority Victoria (epa.vic.gov.au)

Appendix 1
Audit Protocol

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
*Conformity is rated as follows: **C** - Conforms; **MNC** –Major nonconformity (potential or actual significant offsite impact on the environment, and/or legal compliance issue); **mnc** –Minor nonconformity (minor actual or potential environmental impact, may be contained within site or have limited off site impact; documentation issue); **O** – Observation; opportunity for improving the management system and/or operational controls exists. **NA** – Not Audited or Applicable (see "Comments" section for reason why)				
SECTION A - ADMINISTRATION				
2	**Quarry Operations –** • Production rate • Processes • Hours of operation	Approx. 1.3 million t/y production rate. Hours are still current. No work has been conducted outside these hours. Holcim advises no blasting has occurred outside the specified hours.	C	Holcim Quarry Manager – pers. Comm.
3	**Roles & Responsibilities** – • Table of R&Rs	As specified in the Table. Refers only to Holcim employees. Environmental responsibilities are shared across a range of personnel.	C	EMP, pp11-12.
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.	Minutes accessed via *allpossibilities* website, indicating meetings cover a wide range of issues, and involve considerable technical detail when applicable. Minutes: 3 quarters available. Groundwater: to be reviewed – GHD to be appointed. Quarterly Reports: These are comprehensive and include nonconformities and they are how dealt with, monitoring data, and rehab progress reporting.	C	ERC Meeting quarterly reports 2022 (Q1, Q2, Q3); ERC meeting minutes (Mar, May, Aug 2022); LRMP report (Naturelinks), 2021/22; Rehabilitation Report, 2022 (Naturelinks); 2021 Groundwater & Spring Review letter report, AECOM, Feb, 2023; Slope Stability Inspection Report, AECOM, Dec 2021.

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
*Conformity is rated as follows: **C** - Conforms; **MNC** –Major nonconformity (potential or actual significant offsite impact on the environment, and/or legal compliance issue); **mnc** –Minor nonconformity (minor actual or potential environmental impact, may be contained within site or have limited off site impact; documentation issue); **O** – Observation; opportunity for improving the management system and/or operational controls exists. **NA** – Not Audited or Applicable (see "Comments" section for reason why)				
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. ▪ 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 under this EMP, those roles/ responsibilities will be carried out by suitably	RapidInduct – inductions done through this platform (Damstra for contractors). EMP awareness is communicated through a Work Procedure, with sign off. Toolbox talks on HazMats and slope stability sighted. Work Procedure being developed for waste management training. Site does not see value in a paperwork re-induction every year, however an annual refresher induction could be an exercise in examining particular issues (beneficial and detrimental) that occurred over the preceding year, as well as a reminder of the key environmental aspects of the site. Copy of EMP kept in quarry office.	C O O	Training Matrix – 2 Enviro courses; EMP awareness Work; Induction booklet and Checklist sample; Procedure – sign off on completion.

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
*Conformity is rated as follows: **C** - Conforms; **MNC** –Major nonconformity (potential or actual significant offsite impact on the environment, and/or legal compliance issue); **mnc** –Minor nonconformity (minor actual or potential environmental impact, may be contained within site or have limited off site impact; documentation issue); **O** – Observation; opportunity for improving the management system and/or operational controls exists. **NA** – Not Audited or Applicable (see "Comments" section for reason why)				
	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.	No specific specialist training has occurred.	C	EMP version3 doc.
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.			
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	Monthly SIT meetings (sample of minutes sdighted). 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.	C	SIT minutes sighted (May, July, October). Pre-start forms (sample).

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
*Conformity is rated as follows: **C** - Conforms; **MNC** –Major nonconformity (potential or actual significant offsite impact on the environment, and/or legal compliance issue); **mnc** –Minor nonconformity (minor actual or potential environmental impact, may be contained within site or have limited off site impact; documentation issue); **O** – Observation; opportunity for improving the management system and/or operational controls exists. **NA** – Not Audited or Applicable (see "Comments" section for reason why)				
	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.	Toolbox pre-start talks are logged in Toolbox book.		
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 review purposes, and to compare against performance targets.	Three (3) turbidity incidents lodged into ICARE. Minor spill of pre-coat hydrocarbon (1L) and 40L oil spilled on tertiary shed floor – both on sealed surfaces so not needed to be entered into Register. No incidents reported so far for 2023.	C	Database (ICARE) summary (2022).

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
*Conformity is rated as follows: **C** - Conforms; **MNC** –Major nonconformity (potential or actual significant offsite impact on the environment, and/or legal compliance issue); **mnc** –Minor nonconformity (minor actual or potential environmental impact, may be contained within site or have limited off site impact; documentation issue); **O** – Observation; opportunity for improving the management system and/or operational controls exists. **NA** – Not Audited or Applicable (see "Comments" section for reason why)				
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.	**Incident Reporting** – Turbidity exceedances reported to EPA as Licence non-compliances. **ERC reporting** – quarterly reports. **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 – not required by EPA. Key resident (D Petty) contacted prior to each blasting event.	C	EPA Permission Breach Notification Forms – Jun, Aug, Nov, 2022. Text message to D Petty (sample). Quarterly reports – on ERC website. EMP – Appendix 2 – Env Reporting Procedure (28/11/13)
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	Commendably, no complaints were received or recorded for the period. Sign on front gate sighted and is up-to-date.	C	Observation

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
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	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).			
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 (paper and electronic) are well maintained and complete.	C	Records sighted during this audit.

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8.0	**EMP Audit** EMP to be audited annually.	Holcim advises ERC notified of audit beforehand and given opportunity for input, etc. No feedback from ERC re audit program.	C	3rd quarter minutes of ERC meeting.
8.1	**Procedure and Personnel Certification** 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).	Holcim advises no change in specialists conducting monitoring.	C	
8.2	**EMP Review** Every 5 years.	Version 3 of EMP was issued on 24 August, 2022 after Council sign-off.	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	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.	O	

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	accordance with the quarry's EMP Review Procedure.			
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.	Planner for Calendar year 2022 sighted, showing all actions completed.	C	Compliance Planner, 2022
SECTION B – OPERATIONAL MANAGEMENT & 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	Holcim advises no change in site operations since last audit, therefore EMP is current for risks and hazards on site. Mansfield Crushing – mobile crushing, on site for 8 months. Operated under SWMS – identified dust and noise as issues. Water sprays used to suppress dust.	C	Mansfield Crushing SWMS 18/5/22. MS Environmental Policy.

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	procedures are generic and apply 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.	Objectives have been fully achieved. No nuisance or dis-amenity likely to have been caused.	C	No complaints. No evidence to the contrary re health and amenity.
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]	Targets have been met. Reactive Monitoring – no quarry-triggered exceedances were recorded and conveyed to QM, however as detailed in this section below there were significant data gaps due to malfunctioning equipment. Deposition – no quarry-triggered exceedances were recorded for the data obtained. No justified complaints received.	C	Blue Atmosphere - monthly AQM reports (Jan-Dec 2022)

[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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	No (0) justified complaints from sensitive receptors.			
2.1.3	**Management Measures - Actions**			
As required	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.	Water cart operates during quarry operations (6 days/wk) when no stripping occurring, based on weather requirements.	C	Observation – truck observed in action.
As required	Water used for dust control may be dosed where appropriate with dust control additives to enhance stabilisation and reduce water use.	Holcim advises no dosage of additives is used.	NA	Pers. comm. – L Elliott (QM)
As necessary	Relevant operations will be suspended if adequate water cannot be applied for dust control.	Holcim advises this was not done during the audit period, and that water for dust suppression is readily available at the site.	C	
 During clearing All times	Revegetation of exposed surfaces, including the following measures: o Vegetation and topsoil removal will be limited to the smallest practicable area and revegetated as soon as possible following clearance; o Soil stockpiles will be allowed to self-seed when left for extended periods of time;	*See LRMP (Appendix 6)* No topsoil stripping/clearing done during the audit period. Windrow of topsoil along rim of quarry. Vegetated naturally.	 NA C	Observation; photographs

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All times LRMP As required	o The extent of areas prone to erosion will be restricted wherever possible; o Exposed surfaces will be rehabilitated in a timely manner in accordance with the Landscape Rehabilitation and Management Plan (LRMP). o 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). No chemical dust suppression methods used or deemed necessary.	C C C	
As necessary	On days of unfavourable conditions, a review of on site practices will be undertaken to identify actions that can mitigate dust generation.	*See Dust Management procedure.* Holcim advises fixed sprinklers at stockpiles and water cart deployed during unfavourable conditions.	C	L Elliott, pers. comm.
As necessary	Unpaved roadways will be watered on a needs basis during load and haul activities to minimise dust from vehicle movement.	Haul roads mostly observed to be well watered and not generating excessive dust.	C	Observation; photographs
All times	When moving stock, load sizes will be managed to avoid spillages.	Overfilling reportedly avoided to minimise loss of product. No spillages were observed.	C	Observation
All times	Speed limits will be defined and communicated to all machinery operators. Where necessary speed limits will be enforced by quarry management.	Speed limits are specified in the site induction. Signs on site and in the Traffic Management Plan (attached at Appendix 1 of this report). No obvious speeding vehicles were observed during the audit. Holcim advises some quarry vehicles have speed detectors that can alarm	C	Observation

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		when limit is exceeded. Reportedly there have been no instances of speeding.		
As necessary	Paved/sealed roadways within the quarry will be maintained in a clean state to minimise dust from vehicle movement.	Street sweeper reportedly comes to site weekly – sealed surfaces swept only (inside quarry and down Mt Shamrock Rd to corner).	C	Sweeper invoices – sample sighted.
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.	Periodic checks are made of vehicles. Tarpaulin checks indicated a single nonconformity in November - corrected on the spot.	C	Observation; Quarterly Report to ERC (tarping checks)
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.	Wheel wash was observed to be in operation.	C	Observation
As necessary	Roadways immediately beyond the site entrance will be regularly inspected and swept to prevent the build-up of material.	Some dirt being tracked onto roadway at truck pull-over area outside gate. Suggest this be investigated as to whether this is a 'one off' or consistent problem, and rectified if the latter. Stockpile storage site at bottom end of Mt Shamrock Rd (not associated with quarry) noted to be generating dirt onto the road. Quarry and other traffic using the road observed to be mobilising this into dust that could cause amenity problems for nearby residents.	C O	As above. Photograph.

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All times	Travel distance will be minimised through appropriate site layout and design.	Haul bridge in quarry pit constructed to reduce haul distance by 1km per truck movement (roughly 50%).	C	Observation; photographs
All times	Vehicle movements will be restricted to defined areas.	Traffic management plan on office wall – copy attached in Appendix 2 – Photographs (photograph 10).	C	Traffic Management Plan (TMP), 2022.
All times	Speed limits will be defined and communicated to all vehicle drivers. Where necessary speed limits will be enforced by quarry management.	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.	C	Signs in place; TMP
As required	Dust emissions from stockpiles will be mitigated where required to ensure targets are met by: o Wet suppression using sprinklers; o Covered storage of fine material; o Limiting the height and slope of the stockpiles; o Limiting drop heights from conveyors; and o Use of wind breaks.	Water truck used on stockpiles, fixed sprinklers installed. Some conveyors can be raised/lowered to minimise drop heights. Dust is generated at the crushing plant, and when trucks are loaded from stockpiles, however suppression measures are working to reduce emissions.	C	Observation; photographs
All times	Dust emissions from conveyors will be minimised by: o Minimising drop heights; and o Appropriate design of hopper load systems to ensure a good fit with trucks,	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	C	Observation; Monthly sprinkler inspection records (sample); Weekly Running Inspections – sample sighted.

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	and use of appropriate enclosures for hoppers.	generation is visualised on screens and sprays activated when dust is excessive. Crushing and transfer activities are closely monitored at all times.		
All times	Dust emissions during material handling will be minimised by: o Minimising drop heights; o Regularly cleaning up any spillages; and o Appropriate design of hopper load systems to ensure a good fit with trucks, and use of appropriate enclosures for hoppers.	Loading observed – minimal dust emissions occurred.	C	Observations; photographs.
All inductions	All site personnel will be instructed to immediately report situations resulting in elevated dust emissions to the manager (or their supervisor).		C	Dust Management procedure; induction attendance (sample sighted).
All times	Monthly monitoring of dust deposition.	No exceedances - in cases where total dust deposited exceeded the criteria the mineral component (ash) was always found to comply.	C	See above
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 site for analysis by the site personnel or their	Wind speed and direction sighted on share site – real time. The weather monitoring station was not working for extended periods of time during 2022. Site advises the unit failed due to ant infestation and required parts replacement.	C **mnc**	Blue Atmosphere – records data for summary in AQ reports.

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	representatives in the case of complaints and to assist in interpreting dust monitoring data.	Critical environmental monitoring equipment needs to be secured from these intrusions, and replaced when not functioning reliably.		
All times	Dust emissions and potential dust generating activities and areas will be monitored visually during quarrying activities.	Monthly site checks are conducted to monitor for a range of issues including dust. No excessive dust related issues were noted during these checks.	C	Monthly site inspections, 2022 (sample sighted)
As required	Analysis and reporting of dust samples for compliance will be undertaken by an experienced entity independent of the operator.	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. As above, preventative measures should be taken to reduce the likelihood of these data gaps occurring in future. The site is progressively replacing air monitors with new machines.	C O	BA summary reports for 2022 sighted; examples of ALS reports sighted (2022).
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.	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.	C	Blue Atmosphere monthly reports – Jan-Dec 2022

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		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.		
All times	One (1) hourly average PM_{10} data will be provided to the Pit Manager's office from the 'reactive monitoring stations'.	No exceedances reported. 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	As above.
All times	All complaints are to be recorded in the ICARE 2.0 electronic database.	See above in Section A. No dust complaints received.	C	ICARE records
All times	All communications are to be undertaken as per the SHE Communication Procedure.		C	ERC minutes; Quarterly Reports to ERC
As required	Monitoring data are to be provided to ERC as per the Environmental Reporting Procedure.	Quarterly reports were provided to ERC.	C	Quarterly reports to ERC (from *allpossibilities* website).
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.	As described above.	C	Observation. Monitoring data as noted above.
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	

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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	
2.1.4	**Monitoring Schedule** • Monthly deposition monitoring • 4x reactive dust monitors – limit is PM_{10} (1 hour ave.) of 80 g/m^3	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	Blue Atmosphere – Reports Jan-Dec 2022; ALS lab reports, dated Feb 2021-Jan 2022 (except Mar, 2021); Summary Table of Results.
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.	Objective achieved.	C	No complaints of excessive noise. Monitoring data summary (spreadsheet).
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	Target met. No exceedances recorded.	C	Monitoring data summary (spreadsheet).

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	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.			
2.2.3	**Management Measures**			
As required	Extra acoustic measures will be implemented when excavation activities occur within 10m (vertical) of the quarry rim, eg. bunding along the perimeter of the works area.	*See Noise Management Plan (Appendix 7)* Holcim advises not required – no exceedances measured.	NA	
	Regular preventative maintenance (PM) is performed on mobile equipment to reduce unnecessary vibrations and rattles.	Mobile plant serviced based on OEM frequency.	C	PM Reports – sample sighted.
During works	Monitoring of community complaints will be undertaken during the extraction works to assess achievement of the objectives and targets, as required.	*See Environmental Complaints Register in ICARE 2.0* 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).	All locations comply. Calibration of SLM conducted before each round of measurements.	C	Noise Monitoring field notes and monitoring records, 2022 (sample sighted).
Monthly	Monthly Housekeeping inspections will be carried out to assess noise conditions and the effectiveness of preventative measures.	Monthly housekeeping checks are conducted. A boundary noise subjective check is made as part of these, and noticeable sources noted for	C	Monthly inspection records – sample sighted.

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		further investigation. None were reported during the audit period.		
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 SHE Guideline 1.03 – Communication, consultation and Engagement.	EMP compliance is a regular agenda item in the monthly SIT meetings.	C	SIT meeting minutes sighted (sample).
	Monitoring results will be kept in the office of the QM and be made available for inspection at reasonable notice during normal working hours.	Field data sheets are filed and available for sighting.	C	Data as per above. Sample sighted.
Quarterly	Monitoring data will be provided to ERC in accordance with the Environmental Reporting Procedure.	*See Environmental Reporting procedure (Appendix 2)* 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	Quarterly Reports to ERC sighted.
As applicable	In the event that noise from site operations is above 45 dB(A) L_{Aeq} as measured according to **SEPP-N1** (*no longer applicable*[2]) at a sensitive site, strategies for noise abatement	Note: EPA Tech Guide, 2021, specifies effective noise to be measured as $L_{Aeq, 30min}$. This is not practical for this situation. It is therefore suggested that a 5 min L_{Aeq} be measured at each location – where close to	C	Noise Monitoring Results (2022)

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

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	will be developed and implemented to achieve compliance.	the limit (e.g. within 1dB) on several consecutive fortnights, an acoustic consultant be engaged to undertake a noise assessment at that location in accordance with the Tech Guide. Go through EMP and correct all references to SEPPs (for next EMP review).	O O	
2.2.4	**Monitoring Schedule** • 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 monitoring conducted.	C	Fortnightly noise monitoring data summary sheets 2022 (sample sighted); Calibration Certificates for SLM and calibrator (HK Calibration Technologies) dated 15/2/22. Calibration Certificate (HK Calibration) dated 20/2/23.
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.	Objectives have been achieved.	C	

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	To ensure that blasting operations generally are conducted in a manner that minimises the risk of adverse environmental impact.			
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.	Targets met. No exceedances.	C	Blasting monitoring summary data, 2022. Sample of monitoring reports (15/7/22, 22/8/22, 4/11/22, 2/11/22).
2.3.3	**Management Measures**			
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).		C	Documentation for blasts (sample selected as specified above).
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	All blasts within required time 'windows'.	C	As above and below.

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	potentially impacted residents, to the satisfaction of the Responsible Authority.			
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. • 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.	Residents notified prior to each blast (procedure specifies two residents, but Waterhouse was only notified when firing in southern extension, now fully quarried).	C	Blasting records files (2) – sample of blast documents and records (blasting checklist, etc.); Sample texts to D Petty.
Where vibration measure-ments indicate future exceedance may occur	• 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.		C	Summary of monitoring results sighted.

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2.3.4	**Monitoring Schedule**	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	Vibration Monitoring Summary Data Sheet, 2022; Reports for blasts (sample selected); calibration certificates for monitors (24 provided, sample checked for currency).
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 (*environmental values)* of the receiving waters. To assess any long term trends in groundwater levels.	Objectives achieved.	C	
2.4.2	**Targets** 100% compliance with the requirements of the EPA Licence. 100% conformity with groundwater level monitoring requirements	Three (3) turbidity exceedances were reported to EPA. Whilst all were relatively minor and no significant offsite impacts were reported, Holcim advises it is investigating further measure to prevent a recurrence.		EPA Licence OL544; Monitoring Data summary tables (2022); Fisher & Fisher Monthly Flow reports, 2022.

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				Groundwater level summary data (quarterly reports to ERC)
2.4.3	**Management Measures**			
All times	Discharge of water from the site will be managed and monitored (for both quality and discharge volume) in accordance with the EPA Licence. *Note that all surface water discharging from the premises must meet Licence conditions when sampled at the sampling point (i.e. V-notch weir).*	Three (3) Licence breaches notified to EPA – two minor (one of which probably not a breach) and one significant turbidity exceedance (limit is 30 NTU): • 14/6 – tested (33) & reported to EPA. Likely comes from run-off d/s of Dam as Dam water tested as 20; • 26/8 – tested (39), reported to EPA 26/8. Site not pumping from Dam, very likely d/s runoff; • 4/11 – tested (77), retested on 5/11 (61), reported to EPA 5/11. To distinguish between the contributions of paddock runoff and quarry water, Dam water discharge should be field-tested at the end of the discharge pipe from the Dam (i.e. located at the toe of dam wall).	**mnc** **O**	WQ & Flow Summary Spreadsheets, 2021-22; Notifications to EPA – Nov22, Aug22 & Jun22; Email string with EPA (Nov22). Breach notification report from EPA – 26Aug and 5Nov.
Every 12 months	Sediment in the settlement ponds is removed at least once every 12 months and stockpiled within other areas of the quarry.	Sediment was removed from 'dam' (this was clarified to mean one or other of the settlement ponds, not Donazzan's Dam) in March, 2022.	C	Invoice, MC Earthmoving, Mar, 2022.

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All times	Algae will be controlled by: • maintaining flowing water across ponds and Donazzan's Dam, • minimising nutrient input, eg. 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.	No algal growth was reported. Water samples with discoloration were taken from 3 locations including Donazzan's Dam – analysed by ALS for presence of toxic algae. All returned negative results.	C	Inspection Check lists (sample sighted); observation – Photos; ALS/Eurofins laboratory reports, water sample testing.

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As required	In the event of algal bloom(s); • 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 (eg. 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 2022/23.	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 (eg weed control, plant replacement).	Plantings observed to be well maintained, and confirmed in rehabilitation annual report.	C	Annual Rehabilitation Report, Naturelinks, 2022-23. Observation, photographs

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During initial clearing	Areas of vegetation disturbance and ground cover shall be minimised during opening up of new operational areas to prevent erosion.	No stripping done during the audit period 2022/23.	NA	
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].	None of these controls are currently in place.	NA	
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.	Stockpiles along western rim observed to be self-seeding and generally within maximum height specification.	C	Direct observation
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.	Overburden is located within quarry where rock has been removed. Overburden also underlays the main quarry floor pad, with product stockpiles on top.	C	Direct observation

[3] See EPA Publication 1834, *Civil construction, building and demolition guide*, November 2020

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As required	Diversion drains will be provided around the top of the quarry and workings to direct surface run-off away from operational areas.	Drains observed to be in place.	C	Direct observation
As required	Channelling of water flow (rill formation) will be minimised and any channel flows stabilised.	Minor rill erosion near southern rim noted, which appeared to be stable/weathered. Holcim advises this will be stabilised further once the access roadway is discontinued (estimated to now be later in 2023 or 2024).	C	Direct observation
As required	Where practical, erodable 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.	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	Direct observation, photographs
As required	The dual triple interceptor system treating washwater from the plant and equipment wash down pad will be regularly maintained in effective working condition.		C	Plendrive, Dec, 2022 (septic); Cleanaway (TIT)
Quarterly	Water level gauging will be conducted quarterly, and an annual evaluation undertaken, to determine how the groundwater levels respond to the following: o Seasonal rainfall changes; o Extension of the quarry;	Detailed report indicates that overall, groundwater levels are consistent with water levels since at least 2015. The report notes – "the groundwater and spring monitoring (data) collected over the 2022 monitoring period (do) not show any observable influence based on quarry operations."	C	AECOM letter report, 15 Feb, 2023, *2022 Groundwater and Spring Review, Pakenham Quarry*.

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	o Revegetation to parts of the plateau surface; and o Progressive rehabilitation of quarry.	Holcim should **implement the two (2) recommendations of the AECOM Groundwater and Spring Review letter report** of 15/2/23.	**O**	
Monthly	Monthly water level gauging (MB01 – MB06) will be conducted by site personnel.	J. Everett gauges bores. Summary data included in ERC quarterly report.	C	Field forms.
Quarterly	Quarterly recording of in-pit water levels (Northern and Southern dams).	Reportedly conducted by a contract surveyor. Water levels in both dams have remained consistent throughout the year. Holcim advises that it plans to install visual level gauges in each dam. These should be calibrated by survey so water levels can continue to be recorded as R.L.s (AHD).	C O	Pit levels survey data (quarterly, 2022); Quarterly reports to ERC, Holcim.
Annual	Properties surrounding the quarry will be regularly assessed to confirm that the assessed beneficial uses (*environmental values)* of groundwater (in accordance with **SEPP Groundwaters of Victoria**[4]) on the properties is supported by actual practices.		C	AECOM letter report, Feb 2023 (op. cit.)
Fig 4&5	**Water Management System**			
2.4.4	**Monitoring Schedule** As per Appendix 11 (as amended by new EPA Licence conditions) -	Monitoring activities conducted as specified, except:	C	pH, Conductivity, Turbidity and Temperature gauges calibration certificates (Thermo Fisher, HK

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

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	• Dams #1 and #2 Visual Inspection for sediment and algae (monthly) • 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)	• Donazzan's Dam inspection procedure specifies weekly inspections and after storms, and includes WQ field monitoring.		Calibrations); Field calibration summary sheet; WQ summary sheets 2022-23; Daily Flows summary sheets 2022-23; Inspection reports, 2022; Pit levels survey data (quarterly, 2022).
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.	Achieved.		No new slips/landslides reported.
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 revisited and inspected landslip areas in November, 2022, 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	C **O**	AECOM, Mt. Shamrock Quarry - Toomuc Valley Slope Inspection, letter report dated February, 2023.

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		recommendations 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.	The Monitoring Schedule specifies 6 monthly inspections, and after heavy rain. The recently issued slope stability report by AECOM (Feb, 2023) recommends that regular inspections should continue, but refers to them as weekly/fortnightly rather than the currently monthly inspection frequency. Holcim should implement a regular inspection regime that aligns with AECOM's recommendations, as indicated above.	C	Monthly inspection checklists sighted (sample).
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.		C	As per Section C below
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.		C	As per Section C below

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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 ERR in accordance with the Work Plan Landscape and Rehabilitation Report specifications.		C	As per Section C below
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.	Inspections indicate slopes are stable. As commented above for slopes, these inspections are indicated to be 6 monthly or annual. Holcim should reconsider whether monthly inspections of these quarry areas are necessary. 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	Monthly Checklists (sample sighted)
2.5.4	Monitoring Schedule • Overburden Stockpiles, Crushed Stockpiles and Operating Faces • Rehabilitation of Operational Areas • Land Slips – Toomuc Valley, general • Land Slips – Toomuc Valley, • general	Inspections are being done monthly. See comments above re inspection frequency.	C	As indicated above

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	• Land Slips – Toomuc Valley, closest to blast • New Planting or drainage works **(See Schedule in EMP for further detail)**			
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.	Target achieved.	C	GHG calculation spreadsheet (2022).
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'.		C	As above
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	Land bridge construction completed and in use November, 2022. Savings in fuel expected to flow from this point.	C	

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	benchmarks;			
All times	Incorporate energy and GHG awareness into training of managers and supervisors.		C	Induction.
2.6.4	**Monitoring** Overall reduction target of 3% in CO2 – 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 can not 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.	Met for 2022. Site reports just over 4% reduction in CO_2-e emissions.		GHG Calculator (spreadsheet), 2022.
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**			

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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).	Wheel wash in operation.	C	Observation
	All vehicles carrying materials from the site must be loaded and transported in a manner which prevents spillage of materials onto a public road.	Drivers are inducted. Periodic inspection of tarpaulins in use.	C	As above; Tarpaulin check data in ERC quarterly reports.
All times	Early morning truck movements are to be scheduled to avoid queuing outside the boundary of the site.	No trucks are accepted onto site before 7am – signage to this affect has been removed by Shire. Where early morning queuing adversely impacts local amenity, advisory measures such as signs at the bottom of Mt Shamrock Road should be considered.	C O	Induction records (sample sighted), induction booklet.
	All vehicles associated with quarry activities, including trucks and machinery, must enter and exit the site via Mt Shamrock Road.		C	Observation
2.7.4	**Monitoring** Housekeeping checks (monthly) – • Wheels clean before entering public road • Spillage of materials onto public road • Truck queuing during early morning movements • Engine brakes sign clearly visible	Random checks of tarpaulin compliance as part of checklist.	C	Gatehouse operator – visual checks; ERC Quarterly report (visual checks data)

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	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.	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)	NGO areas maintained by Naturelinks. Weeding and maintenance has continued.	C	
2.8.3	**Management Measures**			
As required	Plantings that do not survive will be replaced.	Plant replacement was not specified in Naturelinks' report for 2022-23 for the NGO areas. A small number of additional new plantings were observed in the northern area.	C	Mt Shamrock Rehabilitation Report, v2.4 (Naturelinks, 2022-23)
As required	Supplementary watering of plantings will be carried out as required and permitted by prevailing water restrictions.	Watering was not required during the audit period due to above average rainfall.	C	As above
Monthly during June-December	Weed (including identified woody weed) control works will be conducted on a monthly basis during the primary weed	Weeds observed to be well managed.	C	Mt Shamrock Rehabilitation Report, v2.4 (Naturelinks, 2022-23)

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	season (June to December inclusive) and at other times as required.			
Declared (by CFA) Bushfire season	• Maintain fire breaks during bf season • Preventative inspections for fire hazards	No bushfire season declared during the audit period. Bushfire preparedness inspections occur and include the NGO areas.	NA	BF Inspection checklist, Jan 2023.
2.8.4	**Monitoring** Bushfire prevention inspections (monthly during bf season)	Inspections completed. Visual inspections are reported to have occurred.	C	Bushfire inspections (sample sighted); Mt Shamrock Rehabilitation Report, v2.4 (Naturelinks, 2022-23).
2.9	**Cultural Heritage**			
2.9.3	**Management Measures**			
	All items required under section 2.9 are completed and noted in Appendix 14 *Completed Monitoring/Management Measures* 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	A range of prevention works undertaken - □ Evacuation drills □ Extinguisher checks	C	Bushfire Management Plan, Oct, 2022; CFA Permit #22/2324556C; Training Register – attendance

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	Responsible Authority and the local Country Fire Authority. *Specified in BMP –* • *Warden training up-to-date* • *Check extinguishers and training* • *Complete emergency drill* • *Complete bushfire mitigation checklist*	☐ Site inspection and fuel removal ☐ Smoke alarms/detectors – need to update checksheet to remove detectors with no remote indication ☐ BMP checklist completed prior to fire season.	O	record 3/6/22; Bushfire Mitigation Checklists, 2022/23; Evac checklist – 28/4/22; smoke alarm checks (6/22, 12/22).
All times	Access for all emergency vehicles will be provided and maintained at all times through the site.	Access is provided.	C	Observation
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.	*See SHE Guideline 1.07 –Emergency Response, First Aid and Injury Management.*	C	As above.
2.10.4	**Monitoring** • Evacuation and drill (annual) • Smoke detectors (6 monthly) • Fire prevention works inspection (annually prior to fire danger period) • Fire fighting equipment - mobile (monthly) • Fire fighting equipment – other (AS1851)	Smoke alarms tested June and December. Fire suppression systems in mobile plant checked as part of extinguisher service.	C	Records as cited above.
2.11	**Water Conservation**			
2.11.3	**Management Measures**			
	All items required under section 2.11 are completed and noted in EMP Appendix 14			

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	Completed Monitoring/Management Measures.			
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].	Holcim should draft appropriate waste management target(s) and submit to ERC for comment, and Council for approval, as provided for in *s.8.3 EMP Variation* and Appendix 3 of the EMP, 2021.	NA O	Waste Summary Spreadsheet, 2022.
2.12.3	**Management Measures**			
Timing	**Action**			
June 2008	Characterise all waste streams and develop measures to: o minimise site waste generation; o segregate waste groups; and o direct landfilled wastes to recycle/re-use wherever possible	Completed.		

[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 with in 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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	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.	On-going.		
Annually	Sediment in the settlement ponds is removed at least once every 12 months and stockpiled within other areas of the quarry.	Triple Interceptor cleanout – all EPA waste transport certificates were sighted.	C	EPA Waste Records (Jan (x2), Jun, Jul, Dec).
As required	All prescribed industrial waste (PIW, now referred to as *priority waste*) such as waste oil is to be stored, and transported from the site, in accordance with EPA prescribed waste transport requirements (*Reference 6 of this audit report*).	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. Comingling of PWs was noted in some of the storage skips (grease cartridges) – silicone tubes.	C **O**	Observation; eWaste email trail; EPA Waste records (sample sighted). Photographs.
Annually	The site's septic sewage system will be pumped out regularly.	Two septics maintained, emptied December, 2022.	C	Plendrive Waste Disposal – invoice dated 16/12/22
Annual	Conduct an annual waste survey to establish the types, quantities and re-cycling/ re-use percentages for all site wastes.	The form of words in this management measure is not fit for purpose for the way the site manages waste materials. This requirement should be revised to tie in with the revised wording for waste management targets.	**O**	Waste Survey, 2022
Annually	Use the outcomes of the annual survey to set quantifiable and achievable annual waste	As above – Holcim should develop a form of words that best reflects a credible and effective waste minimisation and disposal	**O**	

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	reduction targets for the site for each waste stream identified.	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 cover all relevant environmental issues.	C	Monthly inspections by QM (sample sighted).
2.13.3	**Management Measures**			
Timing	**Action**			
Monthly	Housekeeping checks will include the following environmental issues: o Chemical and fuel bunding; o Bund content and drainage point valve in off position; o Spill clean-up and spill kit equipment contents; o Waste container labelling; o Tarping practices; o Road and vehicle cleanliness;	Small number of minor items identified for action during the inspections.	C	Environmental Hazard Inspections – 2022 (sample sighted).

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	o Unusual noises; o Visual dust presence of significance; and o Segregation of Inert type wastes from solid and from industrial wastes.			
Monthly/ annually Annually	PM system checklists are available to capture: o Fixed System Dust Suppression o Watering truck and sweeper vehicles o Water spays and lines o Spill Kits Dust extraction units will be serviced annually.	Pugmill – not pulsing in Sep 2021 and Sep 2022. QM advises that this has taken some time to diagnose problem and a replacement part is now to be fitted. Pugmill is a wet process so no pulsing is reportedly not affecting the dustiness of the process significantly. Similarly a number of recurring issues with tertiary dust collector noted. QM advises these are not high priority items and are being monitored. Water sprays – inspection conducted monthly. Faulty items picked up and maintenance is scheduled and completed. Spill kits checked and restocked by contractor. Most found to be well stocked. Water truck observed in action.	C	WamGroup – Silo venting, pug mill and Dust extraction service records (Jan, Mar, Jun, Sep, Dec 2022); Absorb – Spill kit service reports Apr, July, Oct, Dec, 2022; Spill kit map; PM inspection reports (water sprays - sample); PM repairs spreadsheet; Water Truck maintenance PMs, 2022.
2.14	**Storage & Handling**			
2.14.1	**Objective**	Objective achieved.		

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	To minimise chemical and fuel run-off and land contamination due to spillage/ release/ stormwater flushing.			
2.14.2	**Target** No visible oils/fuels in stormwater discharging from discharge point. No significant soil contamination.	Targets met.	C	Observation; Water quality monitoring data sheets (sample).
2.14.3	**Management Measures**			
All times	Signage will be maintained around bunded fuel tanks describing the filling procedure to be followed.		C	Observation
All times	All fuels and chemicals in containers over 100 litres will be bunded when stored or in use.	Measure met at maintenance depot and contractor's container in quarry. Hazmat storage cabinet installed in the latter.	C	Observation; Photograph
As required	Captured rainwater within fuel/oil storage bunds will be released through triple interceptor prior to release to the stormwater system.	No captured rainwater evident in areas inspected. Advised that bunded fuel trailer collects water that is manually discharged through T.I.T. Bunds are enclosed or roofed.	NA	Observation
As required	Areas of significantly hydrocarbon-contaminated soil will be excavated and remediated in accordance with the Hydrocarbon Land-farming Procedure.	None reported or observed. Holcim advises that the electrical company owning the transformer has undertaken to replace it with a new one by next year.	NA	
2.15	**Donazzan's Dam Integrity**			
2.15.1	**Objective**		C	

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	To maintain the structural integrity of Donazzan's Dam.			
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.	Consequence assessment has been completed. Other recommendations from the 5 yearly integrity report should now be progressed.	C O	AECOM, Consequence Category Assessment, Feb, 2023; AECOM, Donazzan's Dam-Pakenham Quarry Intermediate Inspection Report, 8/1/21.
2.15.4	**Monitoring** • Inspection for dam integrity (monthly) – visual, BH1&BH6 • Integrity review by specialist (5 yearly)		**C**	Monthly Dam Inspection checklists (sample)
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: • create an ecological community with a predominance of indigenous species to provide a contribution to net gain objectives and habitat hectares.	Objectives are considered to have been met.	C	Observations, Photographs. Other evidence as set out below.

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	• 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. • 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	Targets have been met – quarry rehabilitation planting is progressing as planned. LRMP has been reviewed and revised as specified below.	C	Observation - Photographs; Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023)

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	accordance with the Work Plan attachment *Landscape and Rehabilitation Report, ERM* (January 2005) and the *Landscape & Rehabilitation Management Plan, 2007*, (LRMP) to the satisfaction of the ERR and the Responsible Authority. Maintenance of existing vegetation where practicable.			
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 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: • 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: o Seed Collection o Topsoil spreading o Hydro-seeding o Setting out works o Fencing and Signage o Supervision o Cleaning Up			

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	o Erosion control o Maintenance during plant establishment period of 52 weeks • Soil Testing 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.			
LRMP s.1.2	This LRMP is to be read in conjunction with the following plans of the development prepared by ERM for Mt Shamrock Quarry: 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, as amended to comply with planning permit Condition 8. The amended complying plans are attached to this LRMP.	No "amended complying plans" are attached to the LRMP at Appendix 6 of EMP – the plans attached are from original ERM, 2005, report (ref. 4). Plans need to be amended to reflect changed thinking in relation to EVCs applicable to the quarry site and in particular the southern faces currently being rehabilitated.	**mnc**	LRMP, June 2021, Rev 3, July 2021 (Appendix 6 to EMP)
LRMP s.2.1 – Rehab Manager	A Rehabilitation ("Rehab") Manager is to be appointed with responsibility for the following: • Ensuring any contractors and staff are aware of the LRMP and its requirements;	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, June 2021, Rev 3, July 2021 (Appendix 6 to EMP); EMP s.3.0 *Roles & Responsibilities.*

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	• 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. The Rehab Manager may change as the project progresses through the detailed design, quarrying/planting stages, to the on-going management phases, during rehabilitation.			
LRMP s.2.2 - Reporting	The Rehab Manager will submit land management reports to the Quarry Manager as specified and described in the LRMP, viz. • Rehab Manager to QM, 6 monthly • Land management reports, 2 yearly	Note: reporting timing is different to that specified in the LRMP, namely - • QM to ERC, 3 monthly • Rehab Manager to QM, annual with daily work checklists submitted monthly	C	Holcim 3 monthly report to ERC; Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023); Daily Works Checklists (Naturelinks), submitted to Holcim monthly.
LRMP	Any complaints received from the public regarding land management issues associated with the conservation and	Holcim advises that, commendably, no complaints have been received during the audit period.	NA	

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s.2.3 – Complaints Register	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: ● 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. The ICARE 2.0 electronic database will be kept throughout the quarrying, planting and rehabilitation and ongoing land management phases.			
LRMP s.2.4 – Non-conform-ance & Corrective Actions	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 to ensure that these non-conformances and required corrective actions are documented and corrective actions implemented within a reasonable time frame.	Kangaroos and deer continue to be problematic in knocking over new plantings (kangaroos) and grazing new plantings. Actions to mitigate these impacts are recommended in the Condition Report (Naturelinks) and should be progressed where practicable.	C O	Vegetation Monitoring sheets (monthly); Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023)

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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.	NA	
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	The latest version of the LRMP is dated July, 2021. It was approved for issue by 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.	**mnc**	LRMP, ver3 July, 2021.

[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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	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 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: ● 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.			
s.4.1 - Vehicle Management	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: • Rehabilitation works / clearing / farm operations. • Vehicles involved in land management. (Patrolling tracks, tractors and farm equipment).			
s.4.1.1 - Vehicle Inspection	• 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	Naturelinks use daily inspection for and outgoing checklist for all vehicles working on site – examples sighted.	C tr	HSE PROCEDURE - HYGIENE PROCEDURES_0235, Nov 2022 (Naturelinks); Inspection checklist (sample).

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	• Develop inspection procedures and locations to suit industry and environmental requirements • Establish and maintain a **checklist** for vehicles, machinery and equipment inspected.			
s.4.1.2 - Clean Down of Machinery, Vehicles and Equipment	• 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	As above – forms indicate whether cleaning has occurred.	C	HSE PROCEDURE - HYGIENE PROCEDURES_0235, June, 2018 (Naturelinks).

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	• 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.			
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.	Roads were observed to be free of debris. Holcim advises that to their knowledge there have not been any instances where this has occurred.	C	Observation
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 health, including	No public access to work areas. 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 sea container and disposed of as Notifiable Priority Waste.	C	Observation; EPA Waste Records.

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	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.	Topsoil storages observed. Holcim advises no new stockpiling of topsoil has occurred. Stockpiles located at rim of quarry. No stripping of topsoil reported to have occurred during the audit period.	C	Observation
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)	Weed spraying is done by Naturelinks and Holcim solo contractor (working separate locations). 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	Weed control records (sample of Holcim Weekly Environmental Worksheets); Naturelinks HSE Daily Inspection Checklists (sample sighted). Observation.

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	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.			
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**	Naturelinks' certifications checked at last audit – A Clarke was about to expire. Has been updated.	C	Andrew Clarke (ChemCert Accreditation, 23/2/22); Kim Everett ChemCert exp 26/3/24;

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	concentration of herbicide and frequency of application.			
s.4.4 - Existing Vegetation Manage-ment	Aside from control of weed species as listed above, maintenance should include: • 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)		C	Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023); observation.
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.)	Plants currently being bought from nursey. No seed collection occurring on site.	C	Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023)
s.4.6 - Topsoil Spreading	Existing site topsoil, sourced from onsite stockpiles established prior to excavation, will spread over the quarry floor to a	Rehabilitation is occurring on site, using topsoil spread from stockpiles at the site.	C	Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023); observation; photographs.

Section/ Timing	EMP Requirement – Summary	Auditor's Findings & Comments	Conf*	Audit Evidence
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	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.			
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.	Naturelinks engage contractor to hydroseed new areas with sterile grasses to ensure stabilisation of applied topsoil and prevent weed generation. Hydroseeding utilised in 1.2ha area (see Rehabilitation Areas Diagram in Appendix 3 of this report).	C	Mt Shamrock Rehabilitation Report, 2022/23 (Naturelinks, 2023); observation.
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 by Naturelinks indicate progress of rehabilitation works. Holcim advises that it regularly checks progress of works.	C	Monthly reports (Naturelinks).
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.	Fencing and signage in place. Fence shows signs of animal intrusion underneath – this should be rectified if practical and effective in preventing feral animal damage.	C O	Observation; Photographs.

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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. 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.	Holcim advises that its personnel are in daily contact with Quarry Manager, and are regularly observing contractor works when in progress and after completion. Naturelinks has a nominated contact person who has a supervisory role for the rehabilitation works. Drawings as specified have been provided to Naturelinks. As indicated above, drawings need to be amended to more closely align with the revised LRMP text.	C	

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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.	The rehabilitation work areas were observed to be tidy with all rubbish/vegetation waste removed.	C	Observation
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.	No signs of significant erosion were observed. Minor evidence of rill erosion observed (as commented on in previous audits) along parts of the steep southern boundary internal faces. This does not appear to have increased in severity over time.	C	Observation
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.			
	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): • Maintenance of the surface of site access tracks. • Maintenance of all fences and signs. • Pruning branches overhanging and imposing on access tracks.	No change from previous audit. Maintenance currently occurring by Holcim personnel and through Naturelinks (as described above) during operational phase of quarry.	C	Vegetation Monitoring Monthly reports (sample sighted); Naturelinks documentation (various, as cited above).

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	• 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. • 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	Not applicable at this time, quarrying activities are expected to continue for a number of years.	NA	

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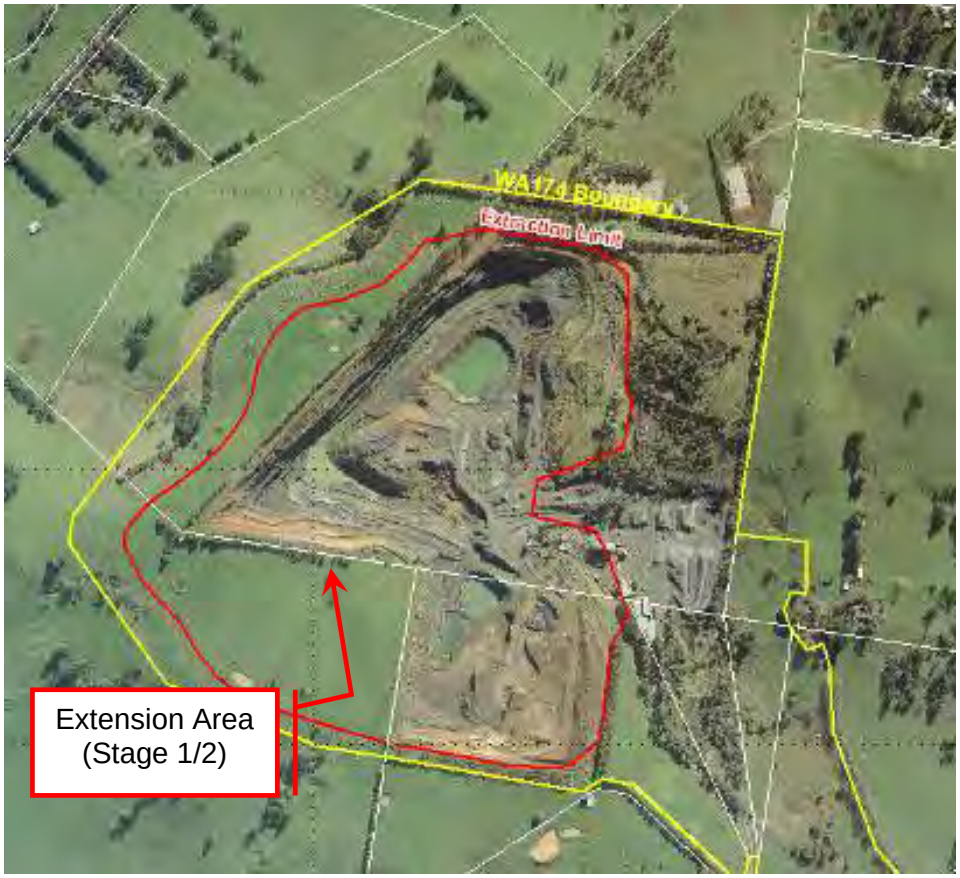
	monitoring and maintenance is to continue for a period of 12 months after completion of extraction after which the planting will rely on natural regeneration.)			

Appendix 2
Historical Aerial Photographs



Photograph 1a: Before extension

Photograph 1b: February, 2023

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: Traffic Management Plan, 2022

Photograph 11: December, 2020 (net gain offset areas shown with yellow bordering).

Photograph 12: December, 2021 (net gain offset areas shown with yellow bordering).

Photograph 13: February, 2023 (net gain offset areas shown with yellow bordering).

EnviroRisk

Appendix 3
Site Inspection Photographs

Rehabilitation Areas. KEY: Phase A & B (Teal), 0.8 Hectare (Green), Southern Extraction (Red), South-East Extraction (Blue), Extraction (Orange), Phase C (White), Landslip (Pink), 1.2 Hectare (Magenta), Paddock Replacement (Peach) and Net Gain (Yellow).

Photograph 1 – Quarry pit, view of progressive rehabilitation of southern extraction face (background), gravel stockpiles (foreground). Arrow shows completed haulage road bridge.

Photograph 2 – Western benches and pit pondage.

Photograph 3 – NE extraction rehabilitation (foreground), southern extraction area (background).

Photograph 4 (a) – Cabinet containing herbicide. 4(b) – Empty herbicide containers awaiting disposal.

Photograph 5 – SE Extraction area (blue) – problems with species selection has led to further plantings of a broader drought tolerant range of species.

Photograph 6 – Quarry pit, stockpiles, crusher plant (right) and NE extraction rehabilitation area (background).

Photograph 7 – SW rim and extraction area currently being worked. Masking vegetation along western rim of quarry.

Photograph 8 – Western rim of quarry and worked benches, showing southern pondage in foreground.

Photograph 9 – Looking NE. Crushing operations, standing pit water (foreground), "Extraction" and "Phase C" rehabilitation areas (left background).

Photograph 10 – Boundary fence, western rim. Animals burrow under fence.

Photograph 11 – Small water collection sump north of equipment graveyard (in Phase C area), potential ferny glade. Signs of feral deer noted.

Photograph 12 (collage) – Nett Gain Offset Area.

Photograph 13 – Equipment graveyard, substantially cleared of derelict equipment.

Photograph 14 – Soil being tracked from non-quarry site (left) onto lower section of Mt Shamrock Road. Quarry traffic observed to be mobilising this material causing potential local dust dis-amenity.

Photograph 15 – Co-mingling of silicon cartridges with oil/grease contaminated cartridges.

Photograph 16 – Truck load-out area; dust is effectively minimised with water sprays.

Photograph 17 – Gravel stockpiles are regularly sprayed to minimise dust generation.

Photograph 18 – Donazzan's Dam diesel-fuelled water pump. Fuel tank is double lined. Spill kit (inset) in shed corner with inspection tag attached.