Preface

This document provides responses to frequently asked questions (FAQ's) and addresses concerns & queries raised regarding Holcim's proposed extension project at the Mt Shamrock Quarry. Holcim is committed to open communication and providing accurate information about the project.

The primary concerns & queries relate to the following key areas:

- Potential loss of amenity for neighbors within 500m of the Quarry
- Air quality impacts from quarry operations
- Noise emissions
- Operational effects on horses and grazing animals
- Planning applications on private properties near the quarry
- Potential impacts from blasting
- Blasting activities near the Huxtable Road reserve
- Management of fauna, flora, and vegetation offsets

Information on the above topics are provided in the body of this document

As of the 10th of August 2025, Holcim has not yet submitted a formal application for a Work Plan Variation (WPV) to Earth Resources Regulation (ERR) or a planning permit to the relevant authorities. Holcim is currently undertaking comprehensive technical assessments necessary to support the application. Holcim is also in the initial stages of consultation with key regulatory bodies, including the Environmental Protection Agency Victoria (EPA), the Department of Energy, Environment and Climate Action (DEECA), and ERR. The approval process is covered in page 13 of this document

Table of Contents

1. Loss of amenity

1.1. 500m separation distance

The 500m separation distance is a guideline (EPA Victoria Publication 1949) in order to ensure industries (such as the extractive industry) can maintain compliance against the relevant standards in areas such as Noise, Dust & Blasting.

Regardless of the separation distance to a dwelling, Holcim is required to demonstrate to the relevant regulatory authorities—including ERR and the EPA—how the proposed extension will meet strict environmental standards, including EPA's Noise Protocol and Air Quality Environmental Reference Standards, prior to any approval being granted.

Beyond meeting these formal compliance requirements, Holcim must also meet the General Environmental Duty (GED), which obliges all businesses to take reasonable and practical steps to prevent or minimise harm to human health and the environment.

1.2. Air Quality (Dust)

The Quarry has an existing air quality management plan and monitoring program in place. The results of the monitoring program are published quarterly, and are available for viewing on the following website under the quarterly reports section.

https://www.holcim.com.au/mt-shamrock

Holcim has not had any recorded non compliance with the air quality standards set out within the Environmental Management Plan (EMP), nor has had any feedback related to dust since since the implementation of the EMP in 2007

Please note that this rock being quarried (older Basalt) is free from Respirable Crystalline Silica (RCS).

As part of the planning process for the quarry extension, Holcim engaged 'KateStone' consultants to undertake an Air Quality Assessment on the proposed changes. The air quality modelling confirms that the extension will comply with relevant EPA standards, and Holcim will continue using both live and static dust monitoring to ensure ongoing compliance. Live monitoring allows the Quarry Manager to respond in real-time if dust levels rise, implementing additional controls as needed.

This assessment (attachment 6) is available for viewing on the following website

https://www.planning.vic.gov.au/environmental-assessments/browse-projects/pakenham-quarry-extension-project

1.3. Operational Noise

Holcim is in the process of finalising the noise technical assessment (completed by Umwelt consultants) to support the extension project. The modelling indicates that Holcim will be in compliance with EPA requirements. Holcim will provide updates on the assessment when it is considered finalised.

1.4. Operational noise and Horses / grazing animals.

The draft assessment considers potential impacts to horses and grazing animals. An extract from the draft report is below.

The potential noise impacts from quarry activities on horses have also been considered as part of this assessment. As noted in Section 3.0, the acoustic environment for the area already comprises noise from road and air transportation, farming and agricultural activities, as well as existing quarry noise emissions and therefore horses at the Huxtable Road Reserve are already considered to be habituated to intermittent noise events and mechanised noise sources.

There is limited publicly available information presenting the results of effects of mechanised noise on horses. A study prepared by Marshal Day Acoustics (Huybregts, 2008) investigated the noise exposure on horses at Melbourne's Flemington Racecourse. This study suggested that horses are exposed to a wide range of noise levels from 50 dB(A) to 90 dB(A) LAeq,15min and a variety of noise sources across a race day. The study suggested that a noise management level of 65 dB(A) LAeq, although arbitrary, appeared to be a reasonable threshold for further consideration of the management of noise levels on horses. The study also suggested there is a link between startling noises and associated visual stimulation. Given the quarry activities are largely below the ground surface level and considering the shielding provided by the terrain, the Huxtable Road Reserve is likely to have limited visibility of the quarry equipment and plant.

The predicted noise levels from the quarry activities are predicted to be well below 65 dB(A) LAeq and should be considered in the context of the existing acoustic environment that comprises road and air transportation noise, agricultural noise as well as existing quarry noise. On this basis, the addition of the activities in the extension area within the existing acoustic environment are anticipated to be minimal.

It is important to note, that prior to any submission for a Work Plan Variation to Earth Resources, Holcim will be required to submit the technical assessments for Air Quality & Noise to the EPA for review and comment to ensure that it meets the relevant standards and complies with the GED.

2. Planning applications on private properties in close proximity to the quarry

Regarding concerns about individual property owners potentially losing the ability to build on their land, it is important to clarify that review of planning applications—particularly when considering objections—are assessed on a case-by-case basis. A primary consideration in this assessment is whether the proposed development would impact the quarry's ability to comply with applicable standards at that location.

Blast modelling undertaken for existing dwellings surrounding the site has confirmed that quarry operations remain within the required limits for both ground vibration and air blast.

Holcim did not object to a recent planning application for a dwelling located approximately 400 metres from the extraction boundary, even though it falls within the 500-metre separation distance. It is also worth noting that the nearest existing residence is located about 300 metres from the extraction area, where Holcim has consistently met all relevant compliance requirements.

3. Blasting

3.1. Frequency & Times of blasting

Quarry Blasting is a controlled process using explosives to break the rock into manageable sizes for extraction and processing. The frequency of blasting varies year on year depending on production demand. However, typically the site blasts once per week approximately 40 times per annum.

The site's approved blasting times are as follows:

- Monday - Friday: 11am-12noon & 2pm - 3pm
- No blasting on weekends or Public holidays

Holcim is not seeking to change these as part of this Work Plan Variation application.

The actual time taken to conduct the blast is less than 10 seconds.

In terms of concerns raised regarding blasting, they typically fall into 1 of 6 categories which are:

- Distance of blasting from the Work Authority Boundary
- Flyrock - The risk of rock ejecting from a blast
- Air Blast - What you can hear
- Ground Vibration - What you can feel or what could cause damage
- Access to Explosives - Security Risk to the public.
- Blasting near the Huxtable Road Reserve

Information to address the concerns on the 6 categories are provided on the following pages

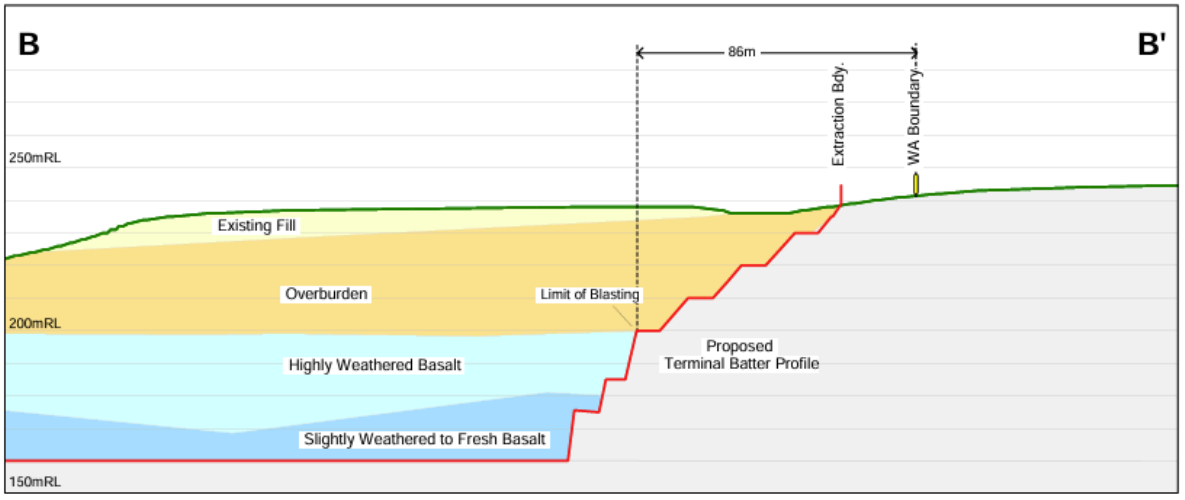
3.2. Compliance

Holcim has maintained 100% compliance for over 20 years with the current prescribed limits for Air Blast and Ground Vibration. There have been no substantiated complaints related to blasting during this time.

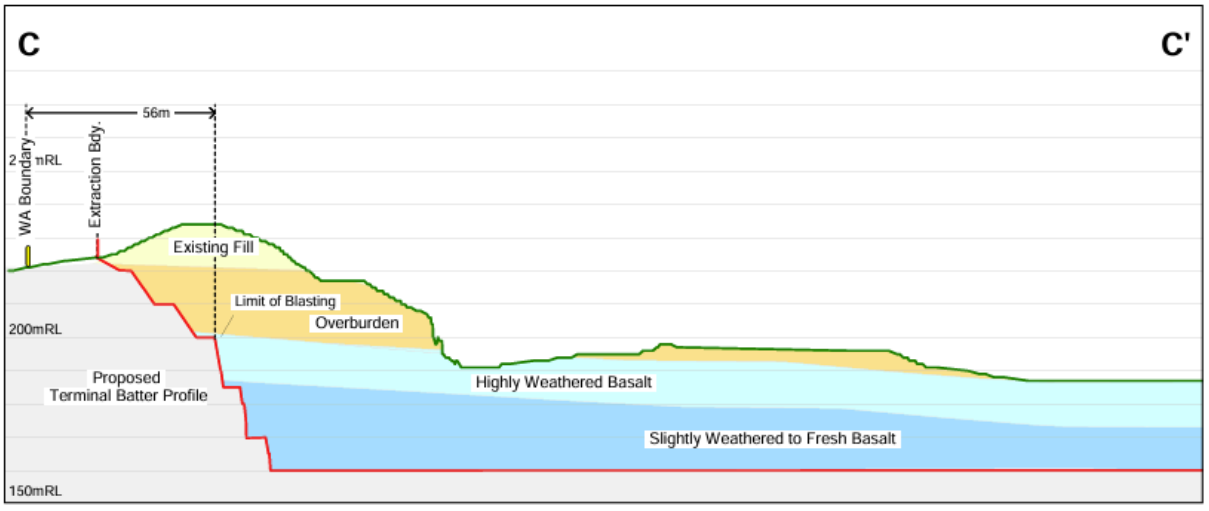
3.3. Blasting distance to the Work Authority Boundary

It is important to note that Blasting will not occur at the current surface level. The overburden (clay and weathered materials) that lie on top of the target rock resource will be free dug by earthmoving equipment and will not require the use of explosives.

In the North East corner, blasting is proposed to occur approximately 40m below the natural surface level and approximately 86m from the Work Authority Boundary. This is represented by a cross section blow



In relation to the North West end of the proposed extension, blasting is proposed to occur approximately 56m from the Work Authority Boundary and approximately 25m below the natural surface level.



3.4. Flyrock

The site has maintained a fly rock-free record for over 30 years. This is attributed to significant improvements in blast preparation and design. The previous manual process has been replaced with a technology-driven approach incorporating laser face scanning, GPS drilling, and bore tracking of drill holes This allows for the proactive identification and mitigation of potential issues before blast loading.

Based on typical blasting parameters at the Mt Shamrock quarry, fly rock modeling predicts a maximum rock travel distance of:

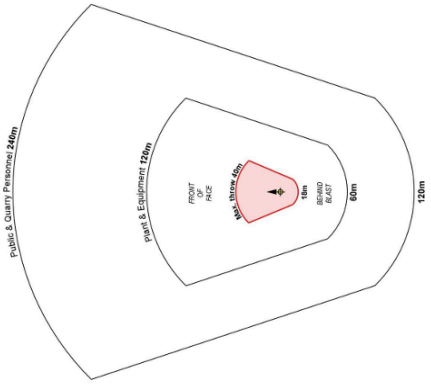
- Behind and to the side of the blast: 18m
- In front of the blast: 40m

When initiating a blast, it is standard industry practice to implement a temporary exclusion zone around the blast. To determine the size of the temporary exclusion zone, aFactor of Safety (FoS) is applied to the distances detailed above.

For this project, Terrock propose a FoS of 3 for plant and equipment and a FoS of 6 for personnel and the public, as detailed in the table and graphic below.

Table 8 – Recommended minimum blast clearance distances for standards blasts

	Front of face	Behind/side of blast
Maximum Throw	**40m**	**18m**
Quarry Plant & Equipment (SF 3)	120m	60m
Personnel & Public (SF 6)	240m	120m



These calculations require the creation of an exclusion zone of 240m in front of a quarry blast and 120m behind the quarry blast. Therefore, during specific periods of the project, Holcim proposes to implement a temporary clearance zone within the Huxtable Road Reserve (HRR) grounds for approximately 10-15 minutes to ensure safety during blasting. Holcim has already been in discussion with the Huxtable Road Reserve Committee (HRRC).

This temporary clearance zone is only required for approximately one-third of the project, specifically when blasting occurs closest to the common boundary (indicated by the red shaded area in the visual representation below). On average this would equate to 3hrs per year that an exclusion zone would be required to be established.

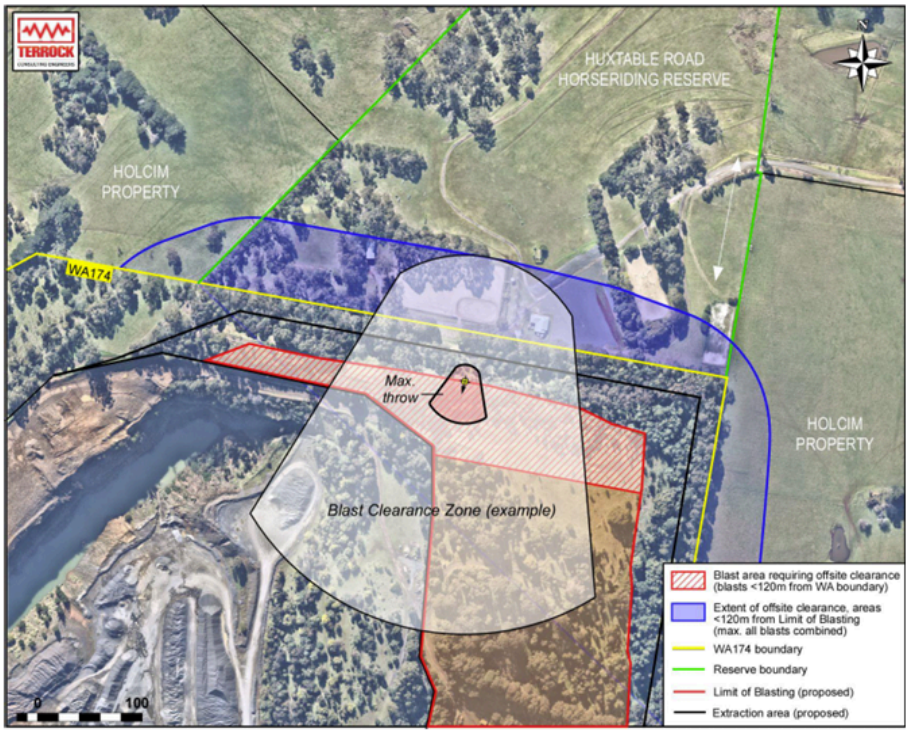


Figure 18 – Blast clearance requirements on adjacent property southeast of proposed extension

At the time an exclusion zone needs to be established, a suitable location would be implemented outside the area shaded in purple. This location would be established in consultation with the HRRC

Holcim has had early discussions with the HRRC in order to develop a mutually agreeable communication protocol so that the users of the HRR will be advised well in advance of any blasts that require an exclusion zone. This process is not new, in the late 1990's and early 2000's the previous Quarry Operator CSR/Readymix and the HRR had communication protocols in place for when blasting near the HRR.

Holcim is committed to minimising impacts on the nearby Huxtable Road Reserve. We are flexible with scheduling blasts and can avoid days when horse riding activity is high. We will also provide a minimum of two weeks' notice ahead of any planned blasts, including expected times and any exclusion zone requirements.

3.5. Air Blast (what you can here)

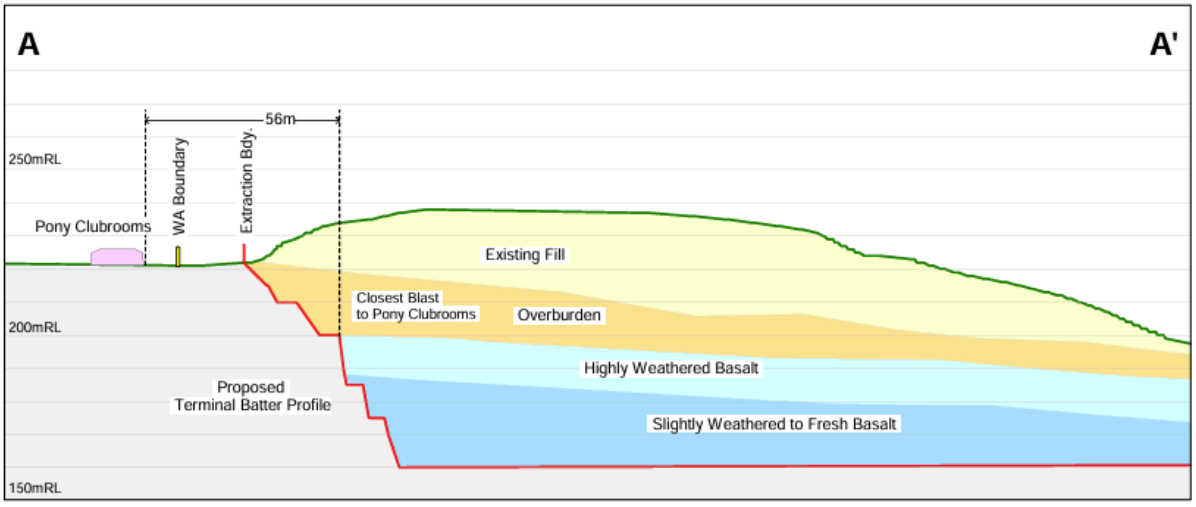
Air Blast monitoring occurs in multiple locations around the quarry, including the North East Corner, and has for a significant number of years. This will continue into the future if an extension is approved. Holcim continues to design blasts with orientation in mind to reduce the effects of air blast.

Our blasting technical assessment for the extension indicates that all blasting in the proposed extension area will be well under the limits of 115dBL for 95% of all blasts, and a maximum of 120DBL, at all dwellings and will achieve this at a distance of ~ 238m behind the blast (circa 250m away from the closest residential building)

3.6. Ground Vibration (what you can feel)

Ground Vibration monitoring occurs in multiple locations around the quarry, including the North East Corner, and has for a significant number of years. This will continue into the future if an extension is approved.

Ground Vibration is currently monitored in the North East corner of the site. Holcim would propose to monitor all blasts at the HRR club rooms. This information is critical in helping perform proposed modifications to blasting practices as blasting approaches the club rooms. Holcim has completed some initial design work which indicates, with modified bench heights and explosive volumes in the blast, we could ensure that blasting can occur inside a zone from approx 90m from the club rooms to the proposed distance of 56m from the clubrooms without causing any damage from vibration



3.7. Access to Explosives

Holcim made a decision 10 years ago to no longer store explosives on site due to the security risk. All explosives are brought to the quarry on the day of the blast, by a licensed contractor. The public can be confident that there is no blasting security risk.

3.8. Blasting in relation to Horses and Grazing Animals

Given the proximity to farms and the Huxtable Road Riding Reserve, Holcim considered potential impacts to horses & grazing animals in the Blast Impact Assessment for the project. Anecdotal evidence indicates that there is no effect on horses, many quarries operate close to stables, agistment areas etc with no known impacts. See extract from the Blast impact assessment for the proposed extension as a reference.

The effects of regulated quarry blasting are not known to cause harm to domestic animals or native species and their habitats. Species including eastern grey kangaroo, wallabies, wombats, and reptiles are found within active Victorian quarries including Mount Shamrock Quarry, often close to active extraction areas. The magnitudes of ground vibration do not occur at sufficient intensities, durations or frequency to cause disturbance. The only potential disturbance is to animals located within a few hundred metres due to blast noise. The commonly observed response of birds and kangaroos located within a few hundred to blasts is to take flight or move a short distance away from the source of disturbance, the same response as from any sudden, loud noise. There is no evidence that blasting has lasting impacts to the health and wellbeing or native animals. Consideration can be given to high levels and long durations of noise and overpressure from thunderstorms that animals have evolved to tolerate.

Most quarries are located in rural or peri-urban areas with livestock grazing on adjacent properties. Quarries in Leongatha and Colac neighbour dairy farms with no adverse impacts to cattle or milk production. Agistment properties are located a few hundred metres from quarries in Dandenong, Lysterfield and Tynong with no reports of stress or disturbance to horses. Horse studs neighbour quarries in Oaklands Junction and Tylden without adverse effects from nearby blasting. Some dogs on properties near quarries are known to bark or howl around blast times though this is a response to the blast warning sirens that must be sounded before and after every blast.

While blast noise from quarries is not known to cause distress to horses, the possibility of individual animals located very close to a blast (i.e. less than 200m) being alarmed or spooked by noise cannot be entirely discounted, particularly young or skittish animals. Due to relatively low airblast levels and the effects of shielding, it is unlikely that a horse in the reserve would be spooked by a blast. However, it is recommended that nearby riders dismount and horses are secured during blast firing as a precaution, particularly for the closest upper-level blasts that would result in the highest airblast/noise levels in the reserve. The ongoing need for this can be assessed by closer observation of the behaviour of horses in the reserve at blast times.

Holcim are aware that not all animals react the same and some can be spooked easily and commit to continued conversations with the HRRC about our activities and anything that may be causing any concerns to horses.

Specifically related to the initiation of the blast, the actual timing of the blast is typically only a few seconds.

4. Fauna, Flora and Vegetation offsets

Ecology and Heritage Partners (EHP) undertook an Ecological and Biodiversity assessment throughout 2024 which included targeted assessments on a number of fauna species for the proposed extension area.

Copies of these assessments can be found on the following web page:

https://www.planning.vic.gov.au/environmental-assessments/browse-projects/pakenham-quarry-extension-project

Contained within these assessments are mitigation and management measures to minimise any impact to local Flora and Fauna. One of the measures is to develop a Fauna management plan. This plan may include actions such as, but not be limited to:

- A qualified wildlife specialist should be present to conduct pre-clearance searches in any identified fauna habitats, and to supervise any habitat removal in order to salvage fauna as per protocols;
- Staged habitat removal is recommended to occur outside of the key breeding and nesting seasons for native fauna likely to reside within the study area (e.g. removing hollow-bearing trees outside of the breeding season for fauna that use these habitat types);
- Prior to the removal of any waterbodies or dams, they are recommended to first be drained and left for one month prior to any works occurring, to encourage fauna to relocate;
- Salvage and relocation strategy for displaced fauna;
- Habitat relocation (e.g. placing felled logs into surrounding areas of retained vegetation for habitat values);
- Adherence to speed limits and appropriate signage for all vehicular traffic along haulage and internal access roads/tracks;
- Recommendations for escape features and refuges that provide for suitable fauna egress from the operational area of the Project to adjacent areas of retained vegetation; and
- Installation of nest boxes in adjacent retained habitat to compensate for the removal of any hollowbearing trees.

4.1. Vegetation Offset requirements

The assessments noted above identified that Holcim would be required to offset 1.67ha of vegetation should the extension be approved.

Holcim has yet to determine if it will be offset via 3rd Party (purchased) or offset within its freehold property.

Prior to any submission to Earth Resources Regulations for a Work Plan Variation, Holcim will be required to submit these assessments to the Department of Environment, Energy

and Climate Action (DEECA) for review and comment. This review may require changes to the mitigation & management measures or the vegetation offset strategy.

5. Approval Process

There are two primary approvals that Holcim must obtain prior to undertaking any works in the North East Corner.

These are as follows:

1. Work Plan Variation approval through *Mineral Resources (Sustainable Development) Act 1990 (MRSDA)*

2. Planning Permit under the *Planning and Environment Act 1987* issued by the Cardinia Shire or the Minister of Planning through the Development Facilitation Pathway.

Holcim has yet to determine the preferred planning pathway they would like to be assessed through. Holcim's present focus is to finalise all assessments, engage with the community and regulators and submit an application to Earth Resources for a Work Plan variation.

6. Keeping the community informed

In accordance with the requirements of the current Planning Permit for the Quarry, Holcim provides the Environmental Management Plan, environmental monitoring data (including but not limited to noise, air quality, blasting, surface and ground water, and waste generation), summary and consultant reports, and the Environmental Review Committee (ERC) meeting minutes on the community link website. The link to the web page is below

https://www.holcim.com.au/mt-shamrock

Holcim is committed to continued dialogue with the community. Should you have any queries, concerns or wish to provide feedback related to the project please use the the following dedicated avenues:

- Information website: https://www.holcim.com.au/mt-shamrock
- Email: au-mtshamrock@holcim.com
- Phone: 0439 381 724