



2022

Quarterly Report

October - December

**Mt Shamrock
Environmental Management Plan
3 Monthly Progress Update**

Prepared for Mt Shamrock Quarry Environmental Review Committee

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Introduction and History

On 11 March 2008, the Mt Shamrock Quarry Environmental Management Plan Version 1:18 January 2008 (EMP) was formally enacted. This document established a framework to ensure compliance with local council, AAV, DPI, EPA and DSE requirements relating to the extension of extractive limits under Work Authority 174 (WA174). An Environment Review Committee (ERC) was formed to monitor the performance of the quarry against the EMP, the permit and WA174. The ERC consists of delegates from the relevant authorities, members of the Wurundjeri Tribe, and local residents. The ERC is chaired by an independent representative from All Possibilities Pty Ltd to ensure non-partisan administration.

This report details information on both monitoring results and management actions by the quarry in the preceding three months. This report will take the form of an exception report that is where there is a deviance from the EMP. This will be highlighted and the reasons for the deviance explained. A summary of quantifiable monitoring outcomes is also included. Figure 1.12 details all monitoring locations.

Operational Update

- Operating hours unchanged.
- Management is unchanged with Leigh Elliott continuing as Quarry Manager and Nathan Thomas in the Operations Manager role.
- Mobile crushing finished up in December and no mobile crushing planned in 2023 as yet.
- Stripping campaign and reclamation works have continued to be delayed due to wet weather and will now commence Q1 2023.
- Annual Ground water & spring survey and slope stability inspections took place in December.
- Annual EMP audit is scheduled for March 1-3.
- 4% reduction in CO2 Generated kg/ t salable product in 2022 compared to 2021.



Figure 1 - Image of the new “Land bridge” in operation, November 2022

1.0 LRMP Update

Summary of actions completed below;

- General Weed treatment and fence maintenance around property.
- Pack spray broadleaf weeds, blackberry and woody weeds, tanker spray broadleaf weeds;
- Brushcutting perennial grass weeds;
- Completed planting Phase A+B zone with dry tolerant species;
- Completed planting lower half of SE and Southern Extraction with a mixture of shrub and eucalypt species;
- Chainsaw large fallen branches;
- Netgain Area - Brush cutting grass areas that cannot be accessed by slasher, brush cut around tree bases and areas of native vegetation that slashing is to be avoided. Hand weed around high value remnant broadleaf species and pack spray with selective herbicide;
- Revegetation of scarp surfaces with grasses proposed at Mass05 and Mass13 has been delayed due to poor access conditions;
- African weed orchid discovered in garden bed outside quarry main office, first recording of this high threat weed on-site. Reported to Cardinia Shire Environment unit.

2.0 Non-Compliance and Complaints

Non-conformances:

- 4th November - Testing conducted at the licensed discharge point returned a turbidity result of 76.6NTU, the compliance limit is 30NTU. All other results were below the compliance limit (PH8.55, Electrical Conductivity 526). Elevated turbidity was from heavy rain during the week (83mm). Pit water was being pumped at the time which had 5.3 NTU.

Complaints:

- Nil during Q4 2022

2.1 Air Quality – Dust

Depositional results have indicated the dust emissions tabulated below. No exceedances during the reporting period.

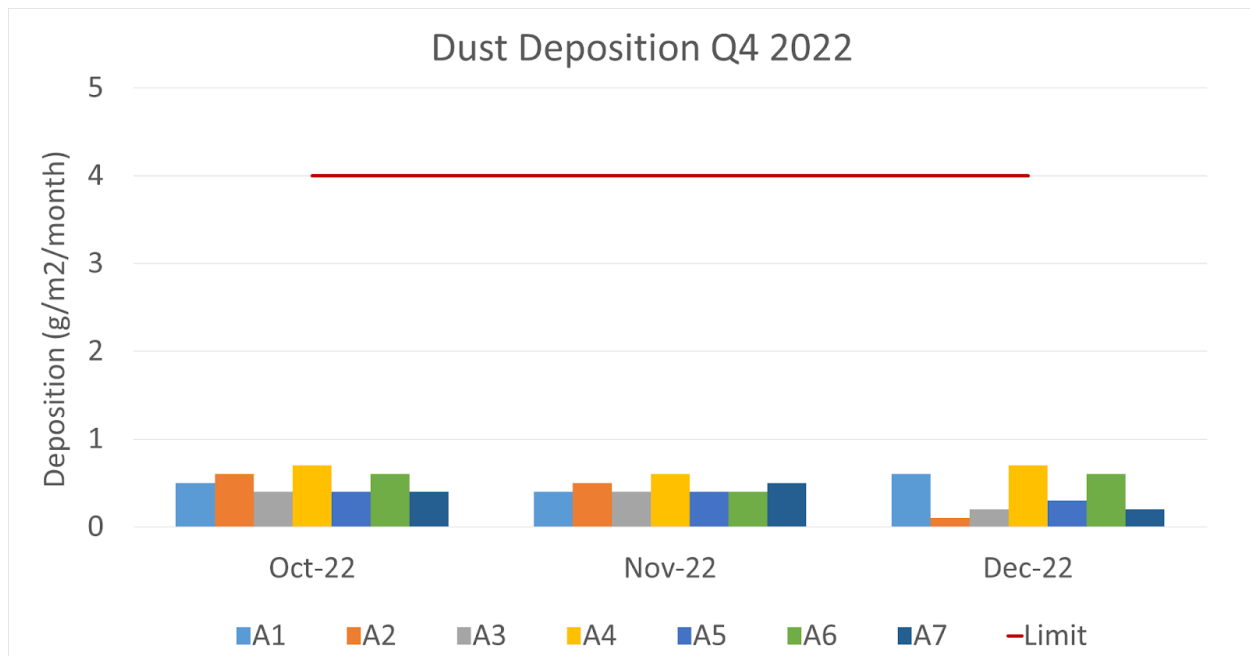


Figure 2 - Dust Deposition Q4 2022. (Limit 4.0g/m²/mth)

Note that the deposition results presented are Ash analysis test, rather than Total Solids, representing true mineral dust deposition generated by quarry activities.

2.2 Noise

Average noise levels for the 4th Quarter 2022 are shown below. No exceedances during the reporting period.

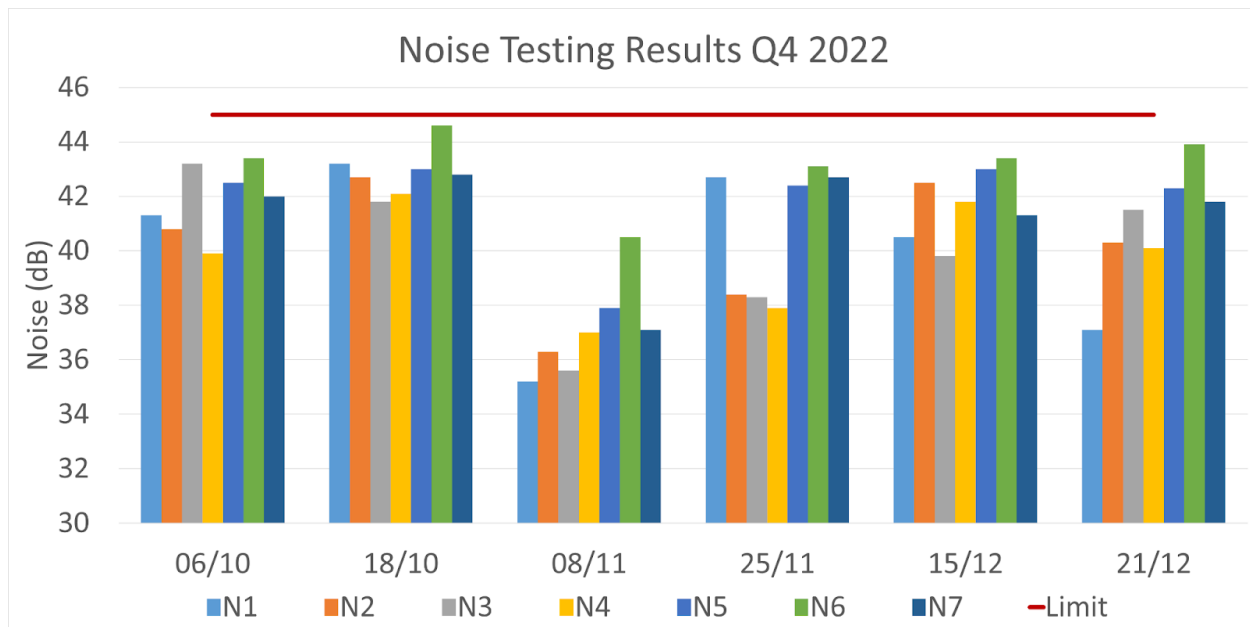


Figure 3 - Noise Testing Results Q4 2022. (Limit is 45dB under normal operating conditions)

2.3 Blasting

All blasting operations have been carried out in accordance with guidelines. No exceedances during the reporting period.

Ground Vibration

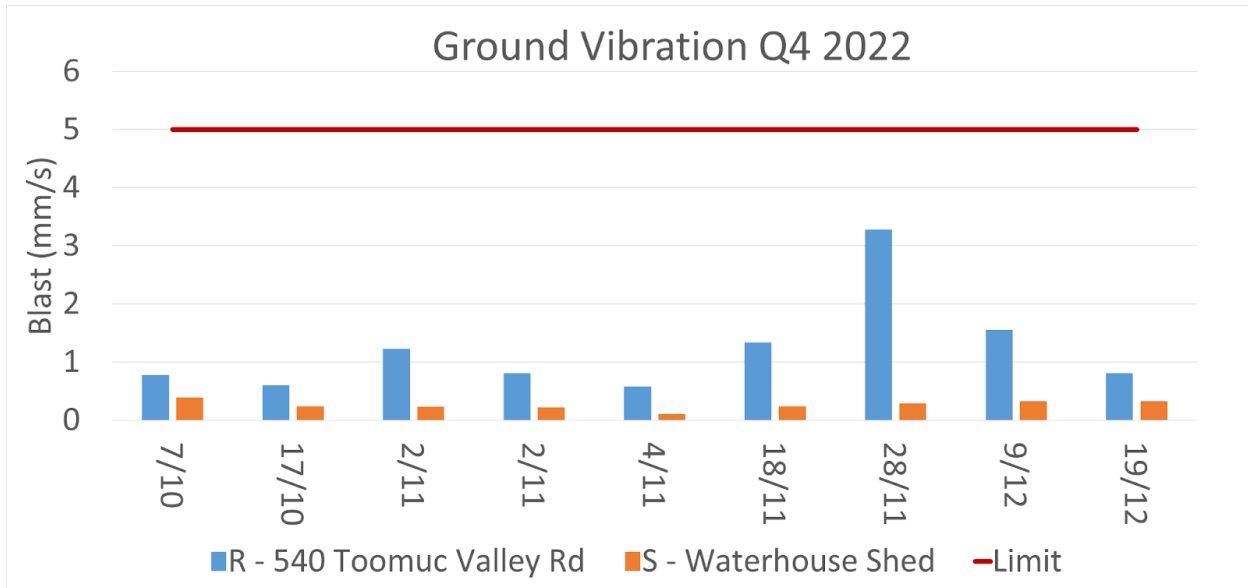


Figure 4 - Blasting; Ground Vibration Results Q4 2022 (Limit is 5mm/s for 95% of blasts in a 12 month period)

Air Blast

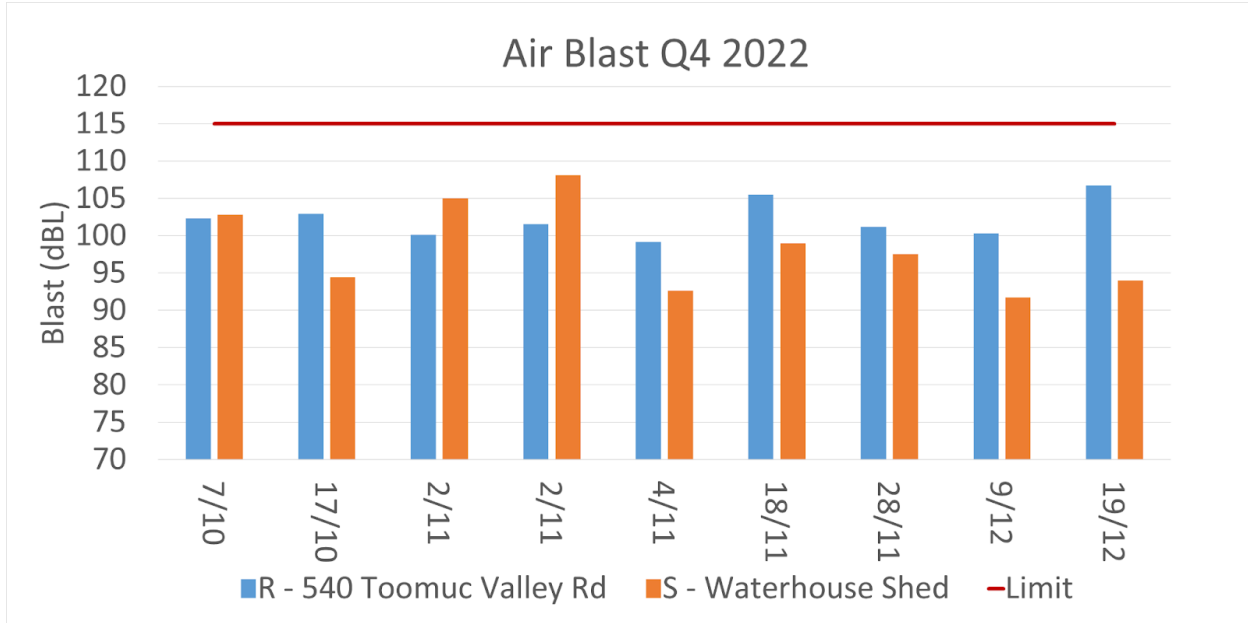


Figure 5 - Blasting; Air Blast Results Q4 2022 (Limit is 115 dBL for 95% of blasts in a 12 month period)

2.4 Surface Water, Drainage and Groundwater

pH – A measure of the Acidity or Alkalinity of the water limit 6.5 to 9.0. No exceedances during the reporting period.

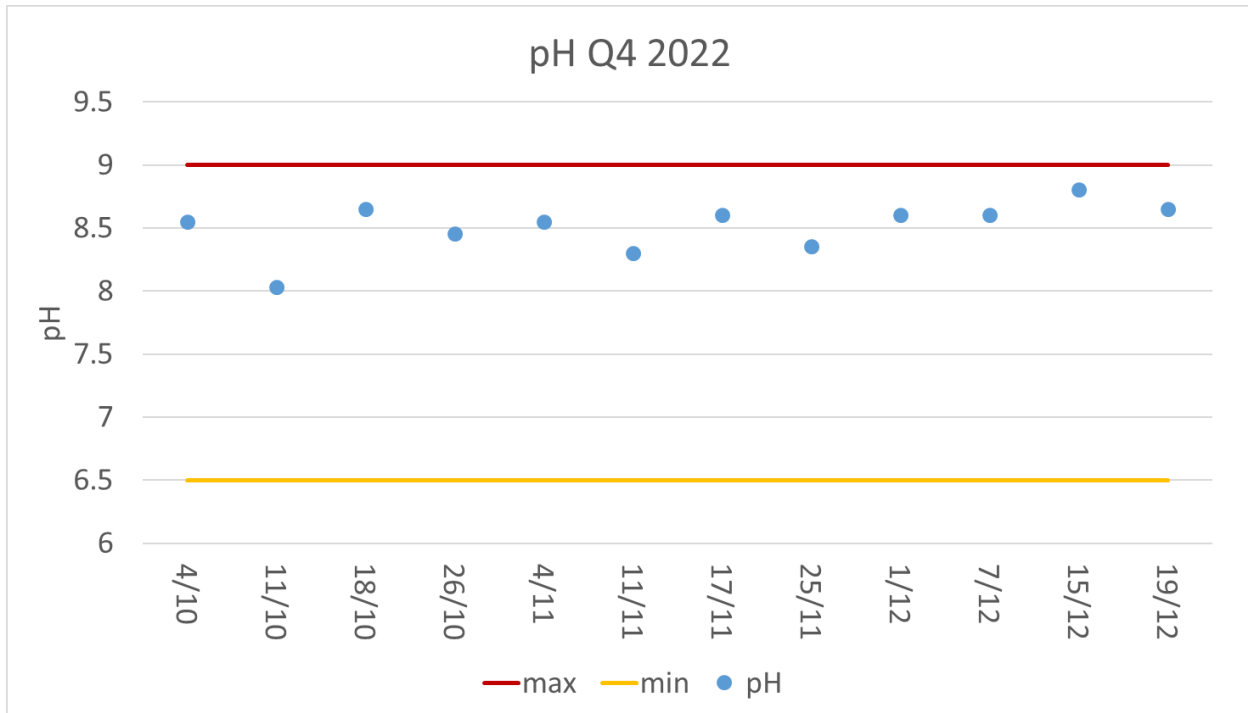


Figure 6 - Discharge Water pH results Q4 2022

Turbidity – Clarity of water Maximum 30NTU.

One exceedance during the reporting period on the 4th November. After heavy rainfall, 83mm for the week, a turbidity result of 76.6NTU was obtained at the V-Notch. The compliance limit is 30NTU. pH and electrical conductivity were both within compliance limits. Reported to EPA and ICARE event # INC-0222089. Pit water was being pumped at the time which had 5.3 NTU.

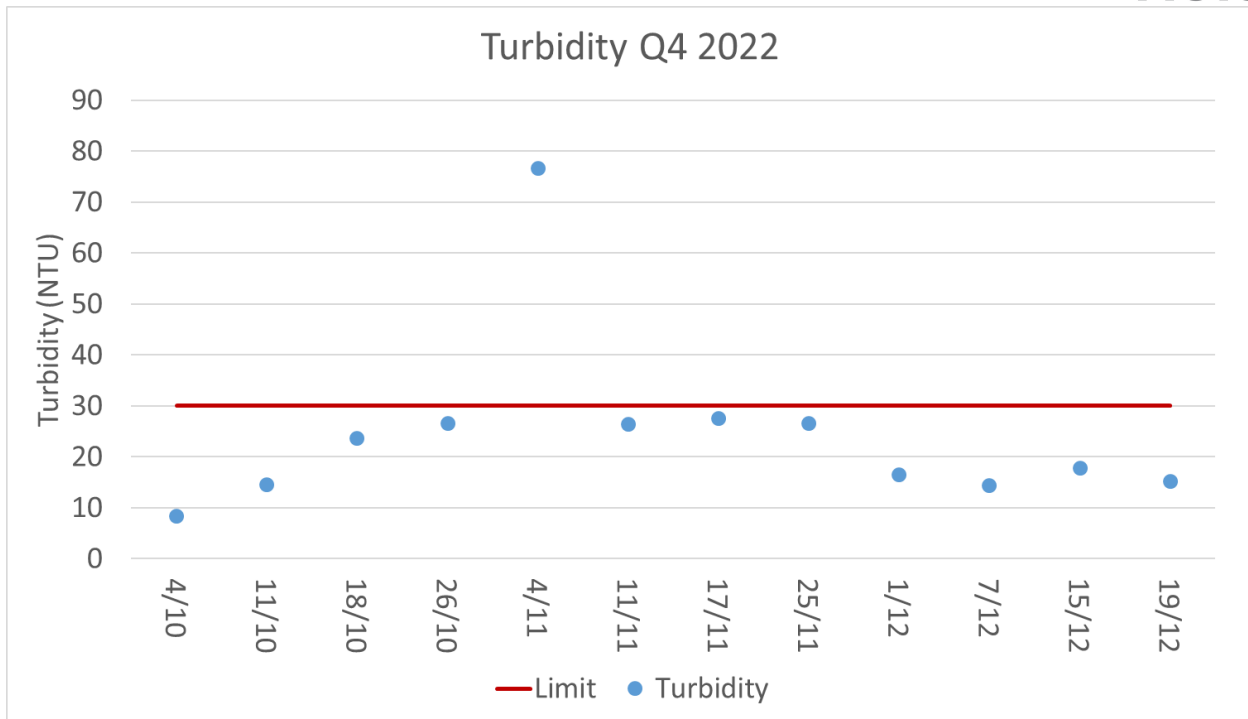


Figure 7- Discharge Water Turbidity results Q4 2022

Conductivity – A measure of the water’s capability to pass electrical current. Limit 1200 μ S. No exceedances during the reporting period.

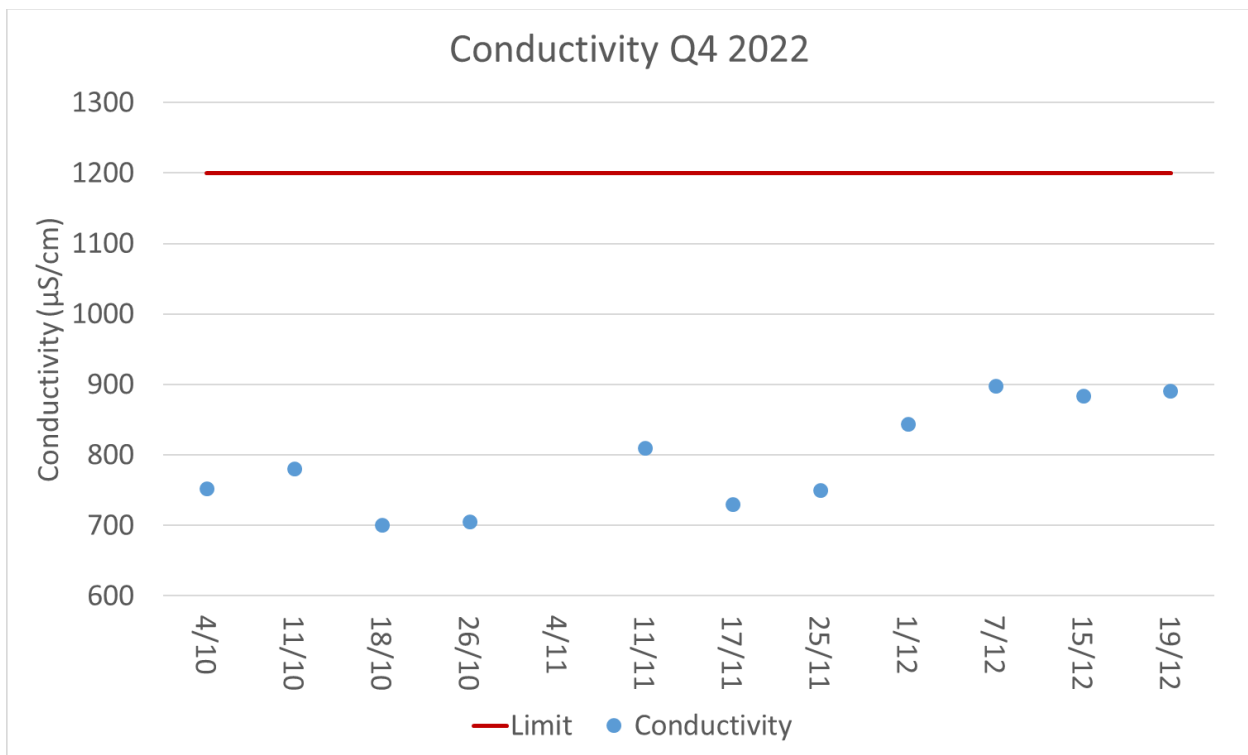


Figure 8 - Discharge Water Conductivity results Q4 2022

Bore Water Measurements

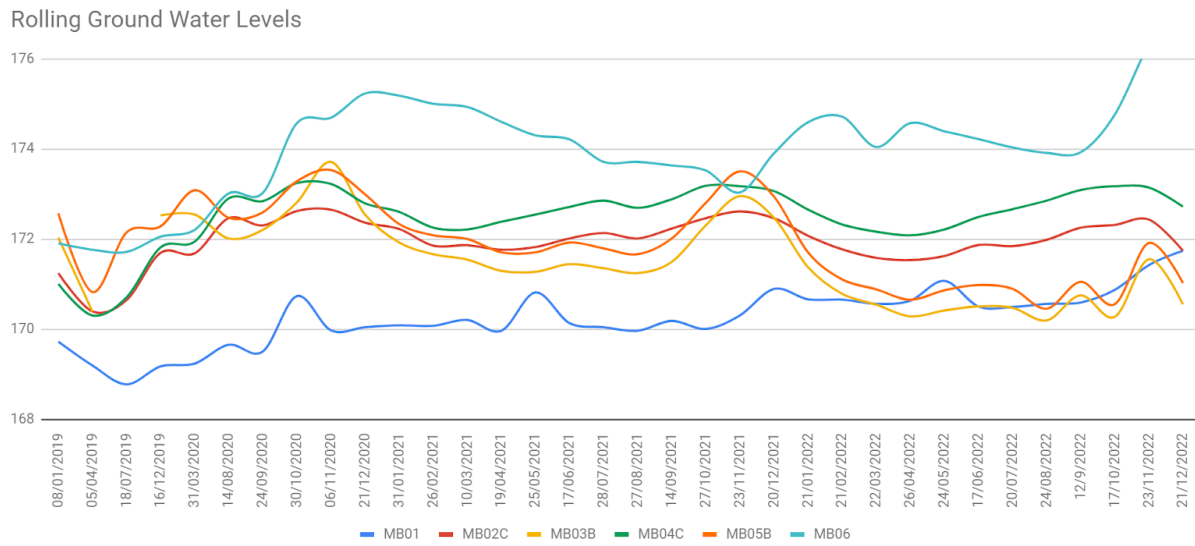


Figure 9 - Groundwater levels 2019 to present.

In Pit water levels

In 2020, Holcim committed to begin and report the in pit water dam levels quarterly, to aid in the annual beneficial use analysis. This was formed as part of the revised EMP submission. Location and naming conventions are shown in the map for reference. All measurements are in RL's (the same unit as ground water levels)

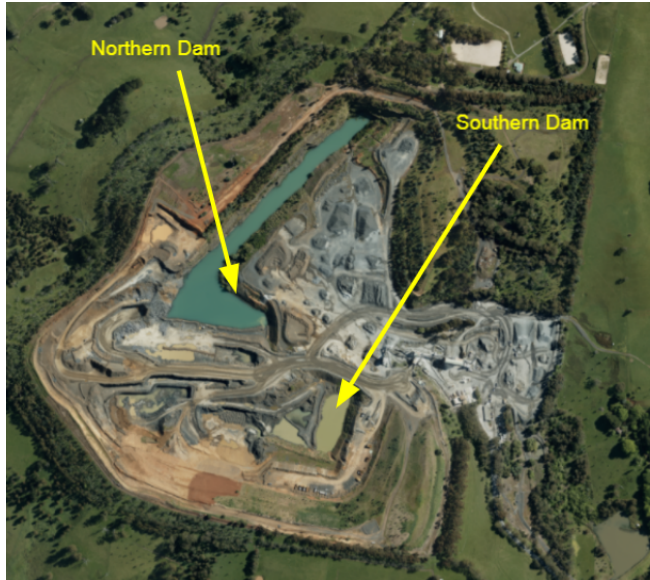


Figure 10 - In Pit Water Identification

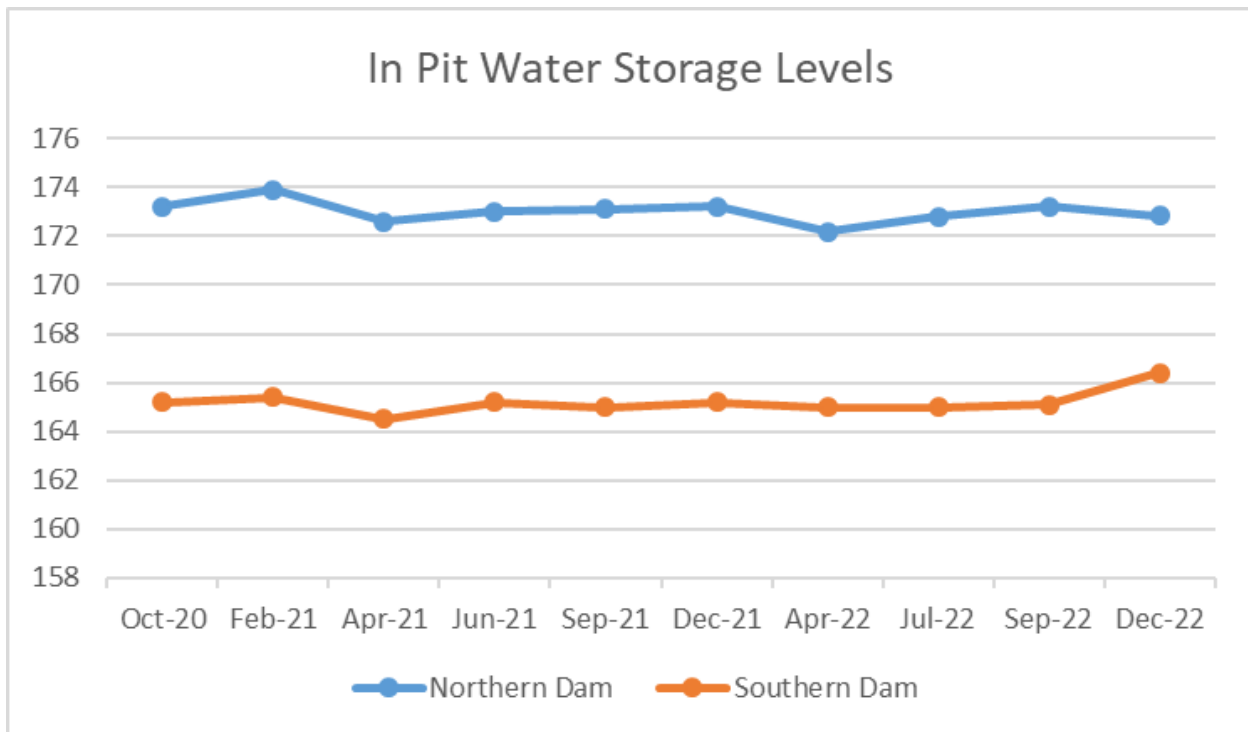


Figure 11 - In Pit Storage Levels October 2020 - Present

2.5 Waste

Annual waste survey completed.

2022 Q4		
Categories	Rolling 12 Month Tonnes	Av / month
Landfill	*4.53	0.45
Category	YTD	
Steel	26.64T	2.22T
Recycled Oil	9,200L	766L
Prescribed	2,406kg	201L
Interceptor waste	27,000	2,250L
Other		
Concrete	20.92T	
Precoat Oil (redundant)	12,000L	

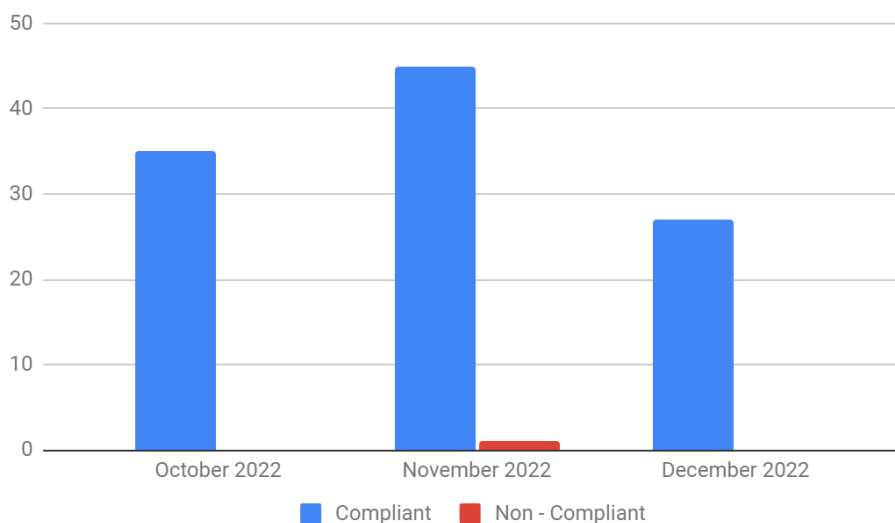
Figure 12 - Quarry Waste Generation Summary of Q4 2022

*Gap in CleanAway general waste data between 19/7/2022 and 13/9/2022

**Table has been updated to reflect waste by weight where possible.

2.6 Truck Tarping

Tarping compliance Q4 2021



One truck was observed with truck tarped but trailer not tarped, 08/11/2022 - HAZID-0474050.

Figure 13 - Tarping visual checks of Q4 2022

Appendix 1 - Limits & Definitions

2.1 – Air Quality - Dust

Dust Deposition

Deposition bottles are stationed at 7 locations including a background monitoring location at station A7. Particulate matter sampled by this method is predominantly dust particles which, because of their size rapidly settle from the air. Results can be affected by Ash from burning off, bird droppings and insects.

Limit – 4.0gm/m² mth

Reactive Monitoring

Reactive management tool with preset alarm if the PM10 1 hour average is exceeded. Reactive monitors are similar to the Hi Vol monitors.

Limit – 64 µg/m³ (1 hour average)

2.2 - Noise

Noise monitoring locations and limits set in the EMP are monitored through the use of a RION hand held monitor. Employees on site who conduct the monitoring are trained and certified in theoretical and practical assessment of the RION hand held meter and basic acoustics.

Limits – 45dB(A) LAeq 7:00 – 18:00 Normal Operation
68dB(A) LAeq 7:00 – 18:00 Noise Attenuation Mound Construction

2.3 – Blasting

Blasting is monitored for Air Blast and Ground Vibration during every blast performed on site.

Air Blast – a measurement of air pressure pulse travelling through the air.

Ground Vibration – a measurement of the shock wave passing through the ground

Limits –

Air Blast Limits – Peak Air Blast of 115 dBL at sensitive locations for 95% of blasts in a 12 month period

Ground Vibration Limits – Peak Particle Velocity (PPV) 5mm/sec at sensitive locations for 95% of blasts in a 12 month period

2.4 – Surface Water, Drainage & Groundwater

During discharge, water is monitored at the V Notch located at the bottom of the Donnazon property spillway. A solar powered flow meter logs flow data and the water is sampled manually by trained and certified employees. Water is tested for Turbidity, pH and conductivity. Water is monitored at Donnazzons dam regularly prior to discharge to determine if the water is ok to discharge.

pH – A measure of the Acidity or Alkalinity of the water. Limit 6.5-9.0

Conductivity – A measure of the water’s capability to pass electrical current. Limit 1200 μ S

Turbidity – Clarity of water. Maximum 30NTU

Appendix 2 – Monitoring Locations



Appendix 3 - EMP Audit action list 2021

EMP Reference	Rating	Non Conformance	Recommendation	Status
2.6.2 GHG emissions	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.	Complete
2.12.3 Waste Management	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.	Complete
2.12.3 Waste Management	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)	Complete
2.12.3 Waste Management	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	Complete

Description **Minor** Minor non conformance - if the environmental impact of the non conformance is likely to be contained within the site or have limited off site impact or is a documentation issue.

Major A potential or actual significant off site impact to the environment and or legal compliance issue including non conformance with prescribed limits of the EMP