



2022

Quarterly Report

April- June

**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.
- Esta Kocsis, Graduate, will be leaving the Pakenham site in early August.
- No official approval from Cardinia Shire has been received as yet from the 2021 review of the EMP.
- 6 Monthly Landscape & Rehabilitation Management Plan (LRMP) report has been issued to ERC.



Figure 1 - Aerial Image of the Holcim Pakenham Quarry, May 2022

1.0 LRMP Update

Summary of actions completed below;

- General Weed treatment and fence maintenance around property.
- Planted sedge and native tussock species gully in Phase C. Planted top area of extraction with lilly species, planted native tussock species bottom of upper slope Extraction.
- Planted Southern Extraction with grasses and lillies in open bare areas, shrubs infilling across site top half.
- Planted lilly and shrub species both top and bottom sections of SE Extraction, approx. 200 x shrubs installed with stakes and guards.
- Infill planting at 0.8 hectare mostly complete, some more gaps to fill and more diversity of species to be added.
- Gang-gang cockatoo's observed SE Extraction a listed endangered species, photographic evidence taken.
- Netgain Area - Direct seed Stipa species Southern section top half below Donsons dam in sprayed out areas. Planting trees and lilly species Lower section of northern area, wet section bordering fence line across top gate entrance of Northern section. Hand Weed around sensitive remnant species southern area top half.
- 1.25Ha of new rehabilitation on the southern terminal face pictured below. Completed topsoil installation and hydro seeded area in July, with Mix of *Rytidospema* sp and *Microleana stipoides*.



Figure 2 - Hydro seeding of 1.25Ha which took place in July

2.0 Non-Compliance and Complaints

Non-conformances:

- 10th June - After heavy rainfall a turbidity result of 33.4NTU was obtained at the V-Notch. The compliance limit is 30 NTU. pH and electrical conductivity were both within compliance limits. Donazzan's Dam was tested at 20NTU. Reported to EPA and ICARE event # INC-0211612.
- Annual turbidity Median was 17.2NTU against a compliance limit of 15NTU.

Complaints:

- Nil during Q1 2022

2.1 Air Quality – Dust

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

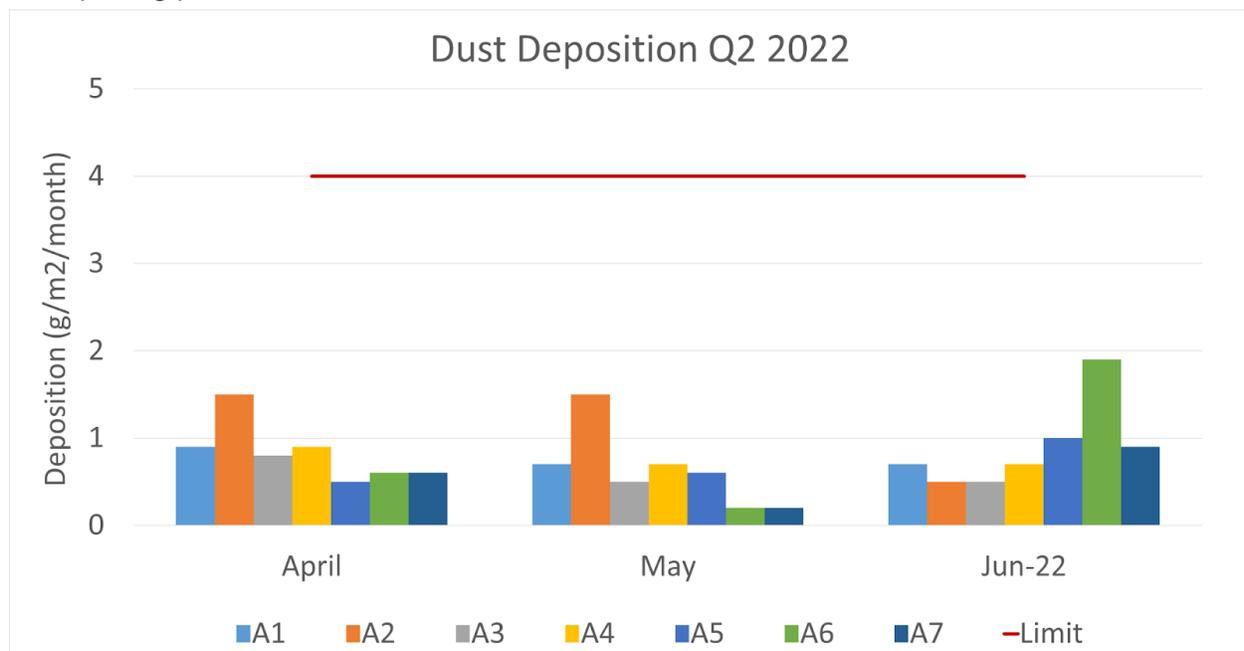


Figure 3 - Dust Deposition Q2 2022. (Limit 4.0g/m2/mth)

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

The weather station is currently non-functional due to ant damage. A new weather station has been placed on order.

2.2 Noise

Average noise levels for the 2nd Quarter 2022 are shown below. No exceedances during the reporting period.

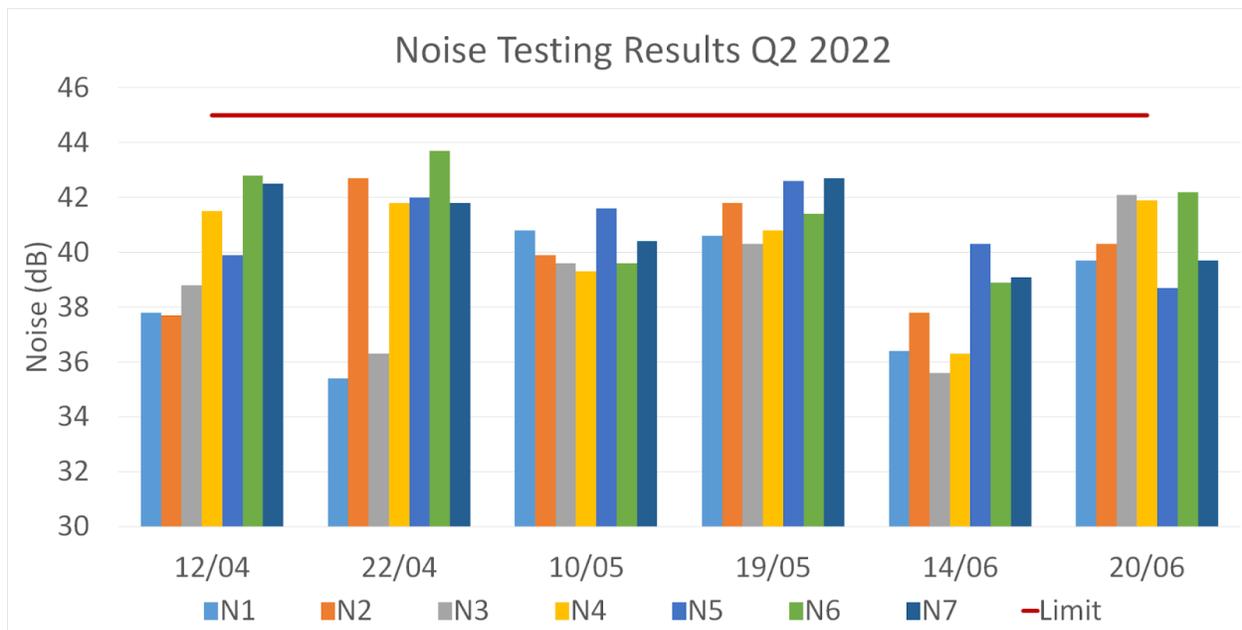


Figure 4 - Noise Testing Results Q2 2022. (Limit is 45dB under normal operating conditions)

2.3 Blasting

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

Ground Vibration

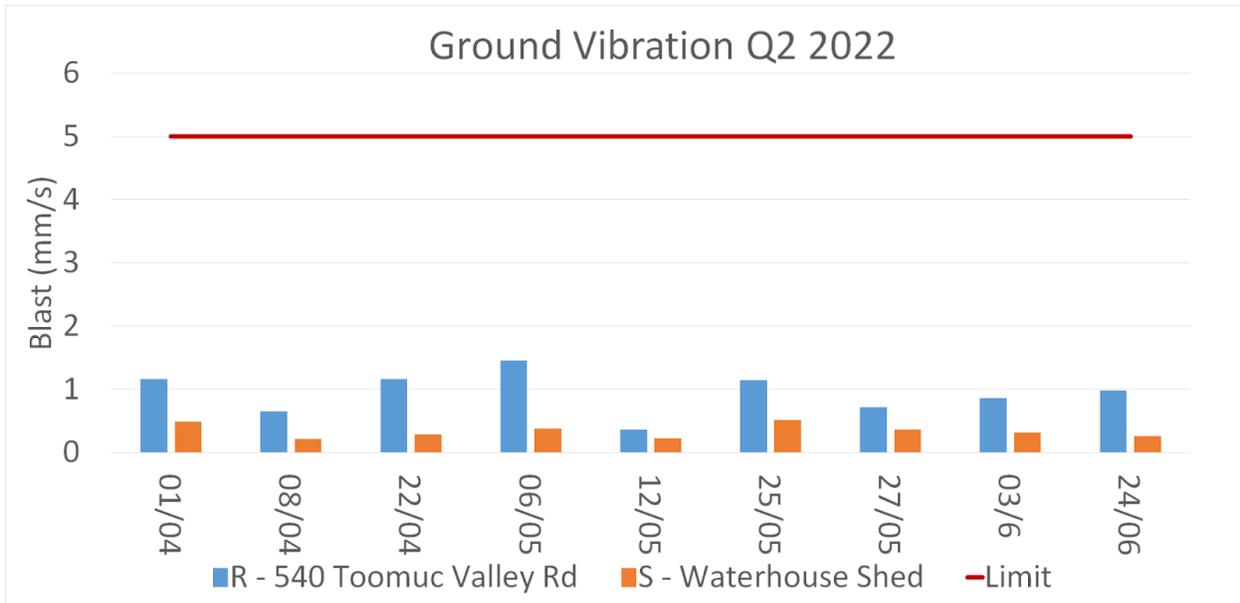


Figure 5 - Blasting; Ground Vibration Results Q2 2022 (Limit is 5mm/s for 95% of blasts in a 12 month period)

Air Blast

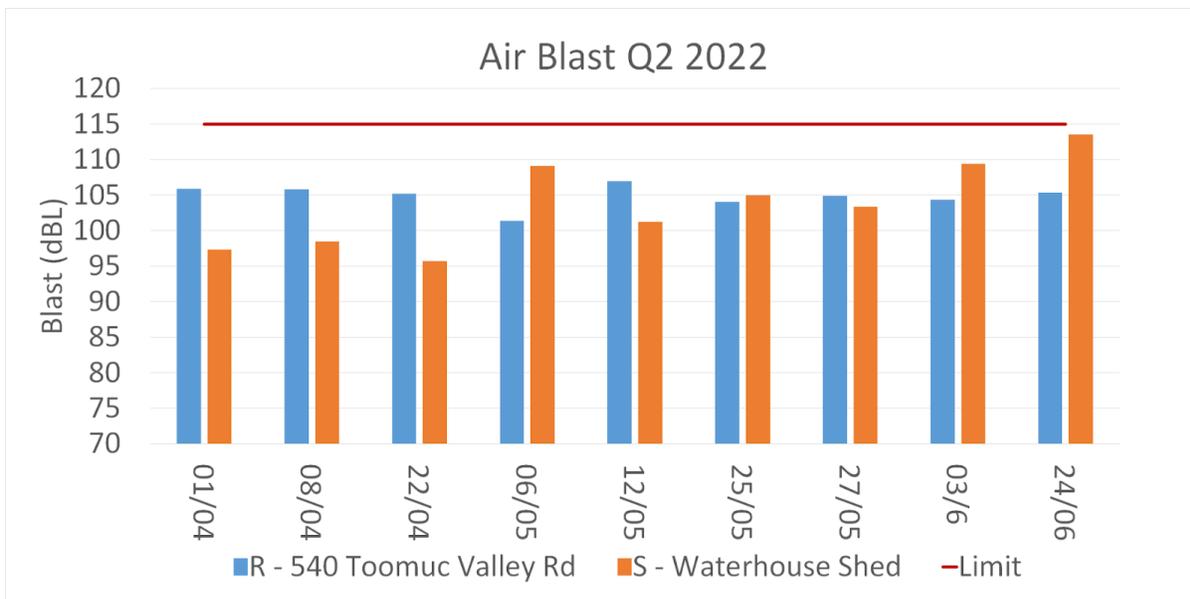


Figure 6 - Blasting; Air Blast Results Q2 2022 (Limit is 115 dB for 95% of blasts in a 12 month period)

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.

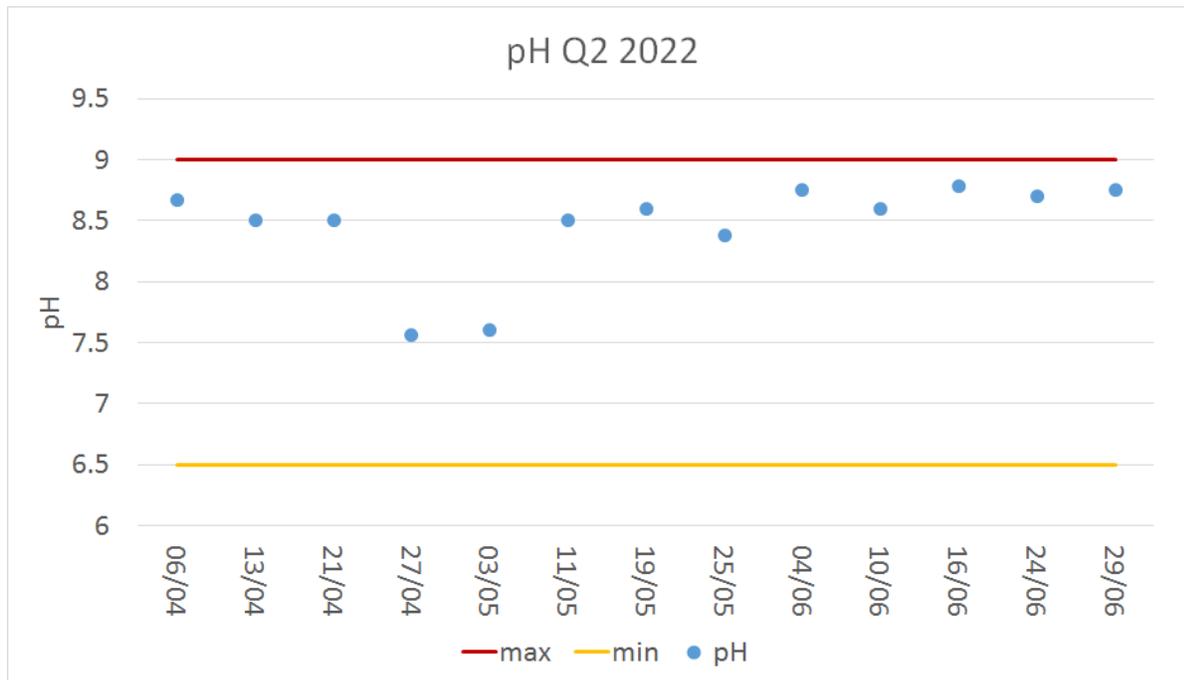


Figure 7 - Discharge Water pH results Q2 2022

Turbidity – Clarity of water Maximum 30NTU.

One exceedance during the reporting period on the 10th June. After heavy rainfall a turbidity result of 33.4NTU was obtained at the V-Notch. The compliance limit is 30 NTU. pH and electrical conductivity were both within compliance limits. Donazzan's Dam was tested at 20NTU. Reported to EPA and ICARE event # INC-0211612.

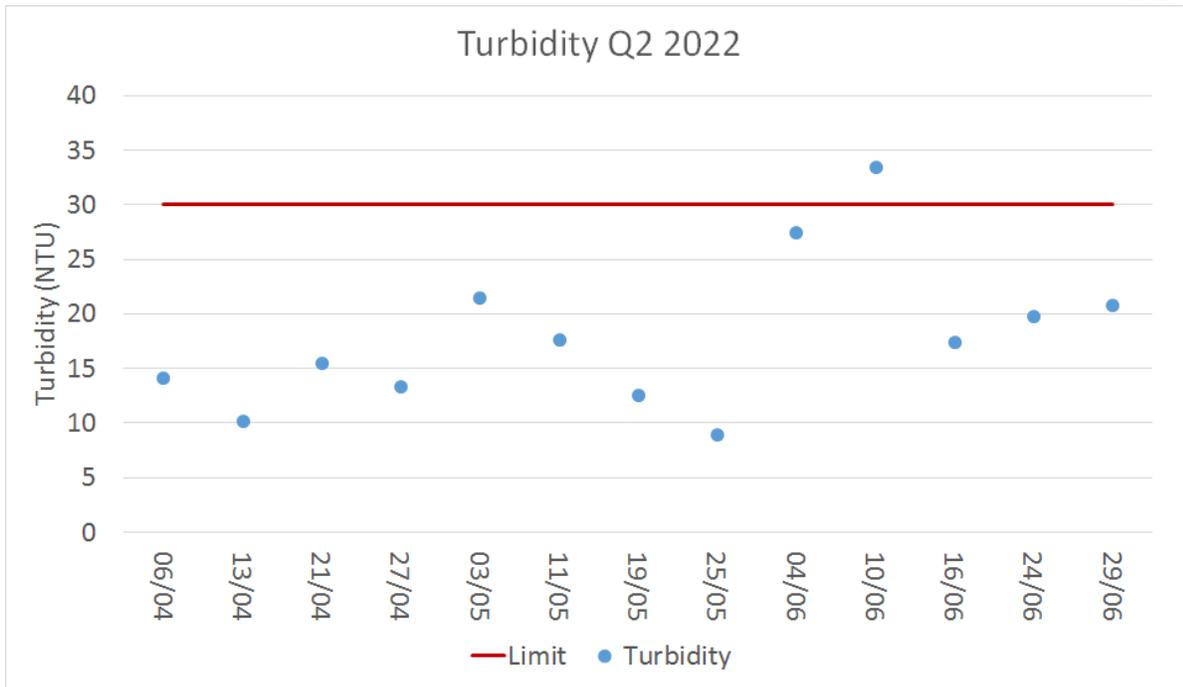


Figure 8 - Discharge Water Turbidity results Q2 2022

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

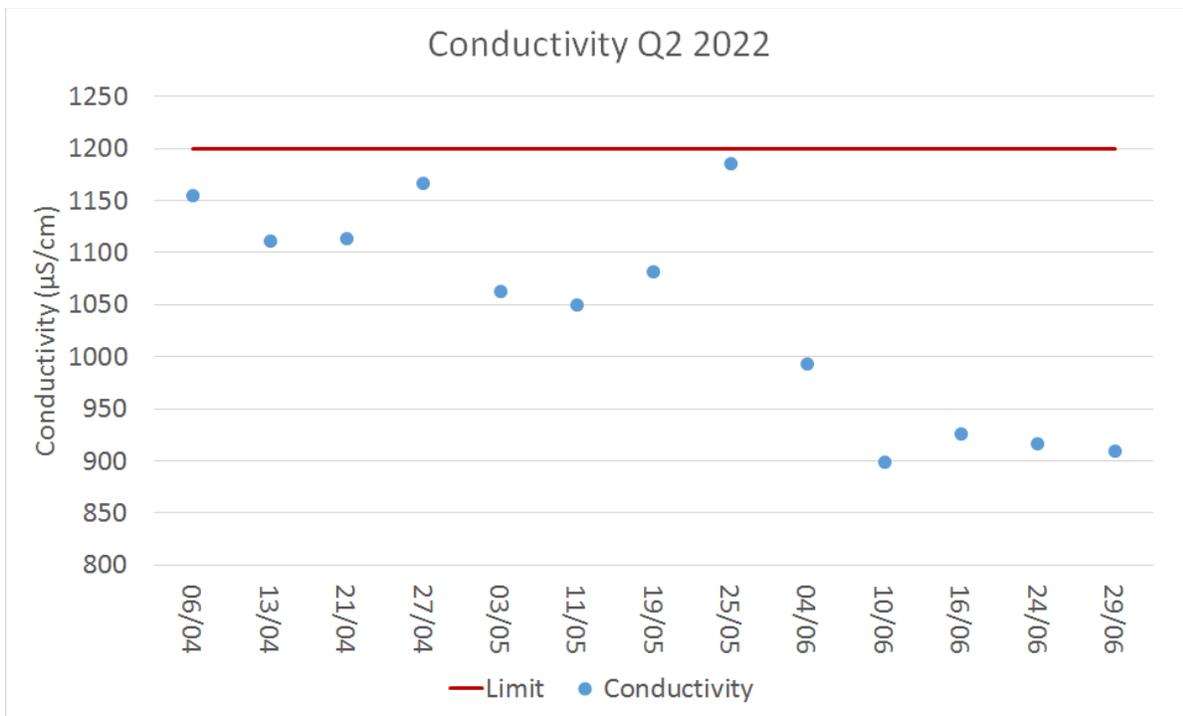


Figure 9 - Discharge Water Conductivity results Q2 2022

Bore Water Measurements

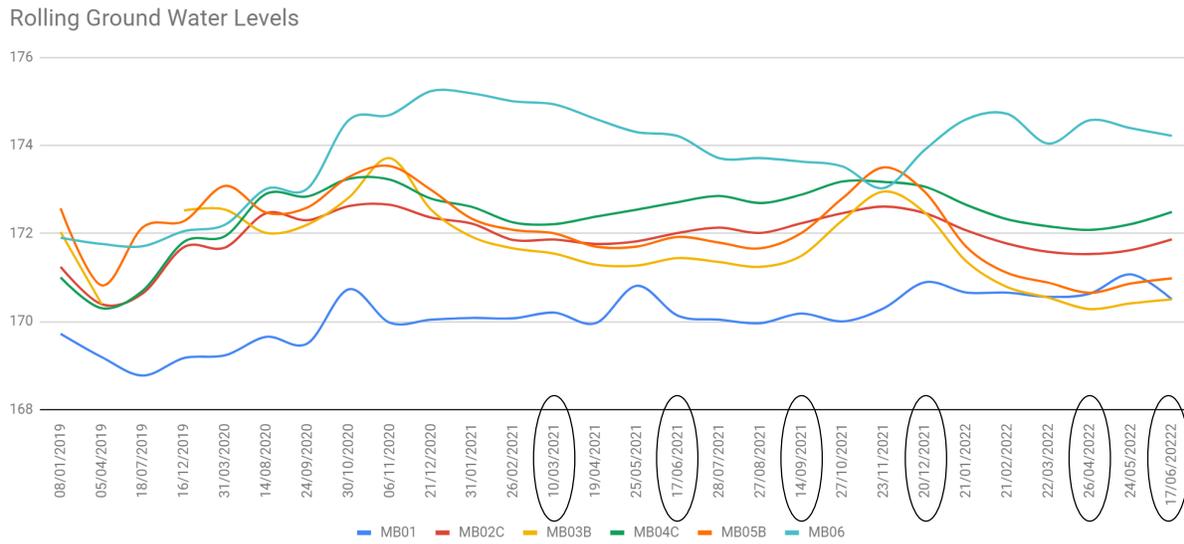


Figure 10 - Groundwater levels 2019 to present (Circled dates indicate from Dec 2020 the readings conducted by AECOM. All readings prior to August 2020 were taken by AECOM)

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 11 - In Pit Water Identification

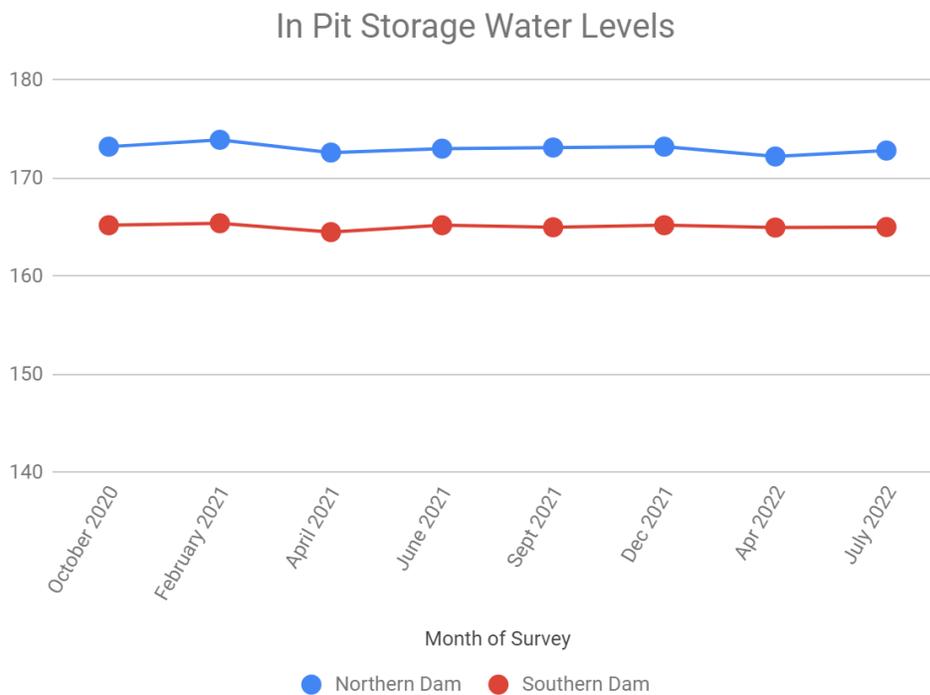


Figure 12 - In Pit Storage Levels October 2020 - Present

2.5 Waste

2022 Q2		
Categories	Rolling 12 Month Tonnes	Av / month
Landfill	6.55	0.54
Category	YTD	
Steel	10.64	1.77T
Recycled Oil	1,200	200L
Prescribed	2,255L	376L
Interceptor waste	19,000	3,166L
Other		

Figure 13 - Quarry Waste Generation Summary of Q2 2022

2.6 Truck Tarping

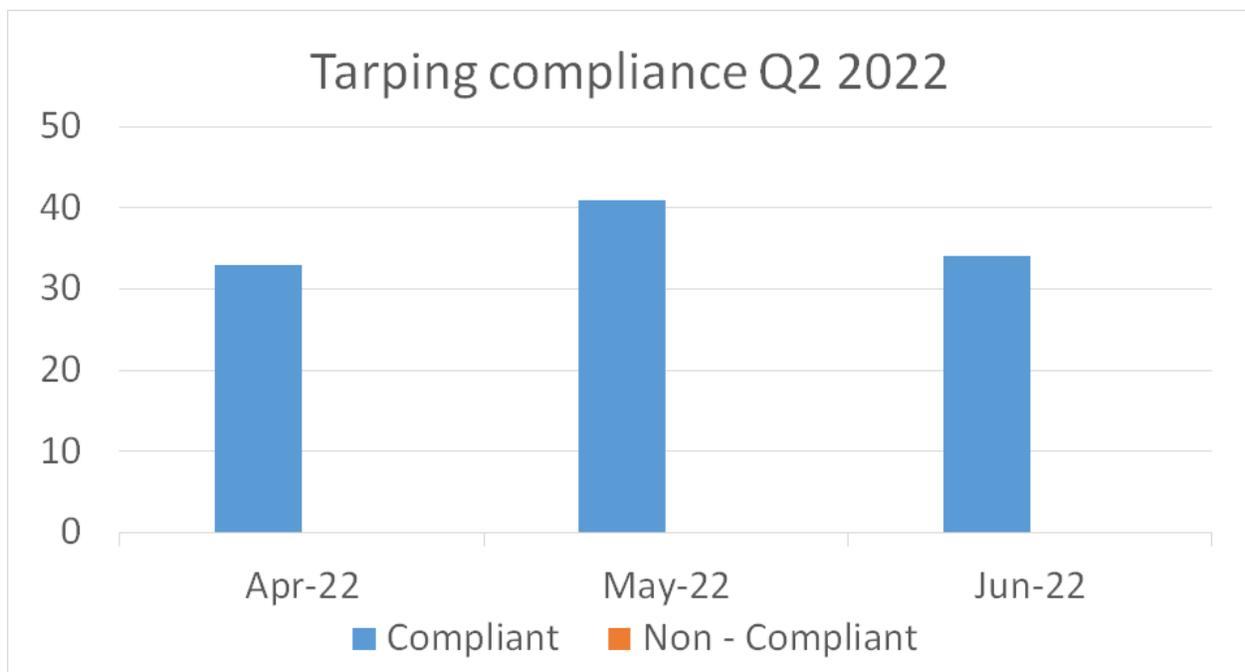


Figure 14 - Tarping visual checks of Q2 2022

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



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.	Open
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.	Open
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)	Open
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	Open

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