



2023

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;
- GHD Hydrogeological review report has been distributed to ERC.
- Mobile crushing took place during June and July
- Stripping and reclamation works have continued throughout Q2.



Figure 1 - Site Aerial 17th July 2023

1.0 LRMP Update

6 Monthly Landscape & Rehabilitation Management Plan (LRMP) report has been distributed outlining works for the period of January 23 - July 23.

A total of approximately 3,000 plants have been planted up until the end of July with a further 3,400 to be planted in Q3 and Q4.

Summary of actions completed in Q2 below;

General

- General Weed treatment and fence maintenance around Quarry.
- Chainsaw large fallen branches;

Netgain

- Pack spray blackberry and small woody weeds
- Handweed agapanthus that had spread from neighbouring property
- Pack spray weedy grass species around the Poa planting area.
- Handweed around cynoglossum, pack spray high priority weeds with non selective herbicide at various locations

Southern Extraction/ SE Extraction/0.8Ha/1.2 Ha

- Brush-cutting weedy grasses and pack/tanker spray blackberry, perennial weedy grasses, Pampas grass and broadleaf weeds.
- Stake and guard removal, those in good condition to be re-used in for this year's plantings.

Phase A&B

- Pack spray high priority broadleaf weeds with selective herbicide mostly thistles in preparation for plantings.
- Pack spray blackberry and woody weeds starting from NE corner heading south

Stripping and Reclamation

- Overburden removal (stripping) has been conducted during Q2 (red outline) with emplacement of the rocky overburden and clay materials being placed in the western most corner (yellow outline) for reclamation works.
- Topsoil was removed from the stripping area and directly placed on the new 1.1 Hectare (Ha) Revegetation area discussed below.



Figure 2 - 2023 Stripping area (red) and reclamation area (yellow)

A new 1.1Ha Revegetation area has been established adjacent to the 0.8Ha (est 2021) and 1.2Ha (est 2022) Hectare Revegetation Sites. Topsoil has been spread in preparation for hydroseeding and planting in Q3.



Figure 3 - Identification of the new 1.1Ha Revegetation Site

2.0 Non-Compliance and Complaints

Non-conformances:

- Nil during Q2 2023

Complaints:

- Nil during Q2 2023

2.1 Air Quality – Dust

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

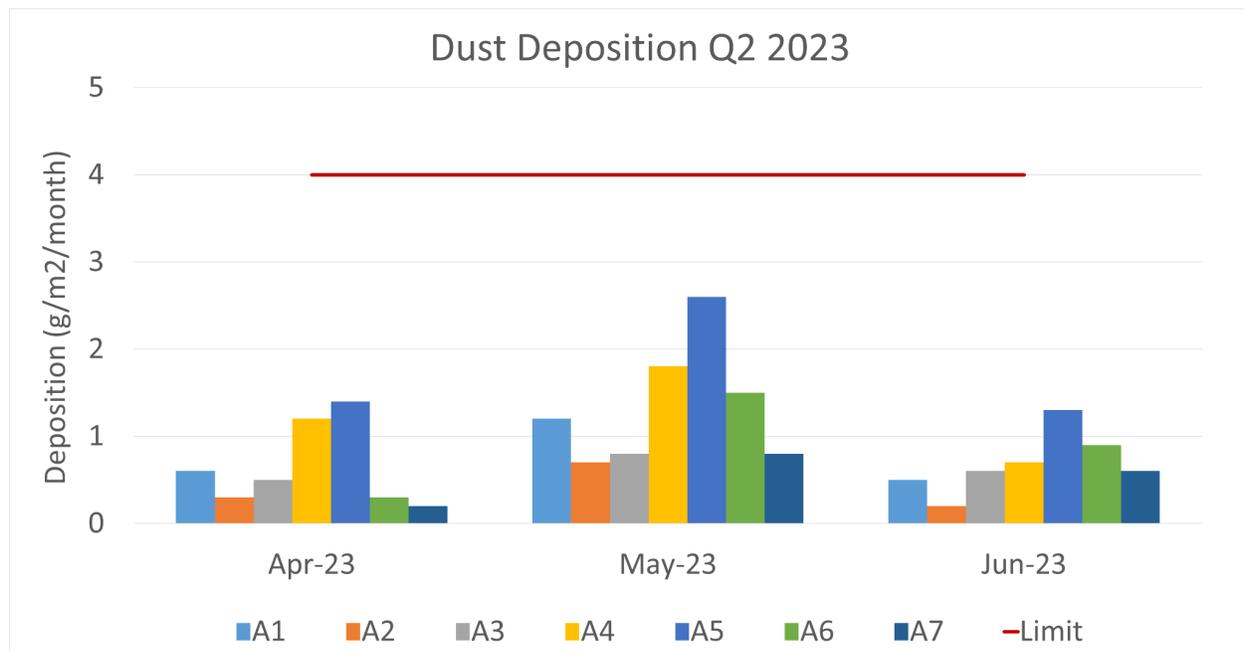


Figure 4 - Dust Deposition Q2 2023. (Limit 4.0g/m²/mth)

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 2nd Quarter 2023 are shown below. No exceedances during the reporting period.

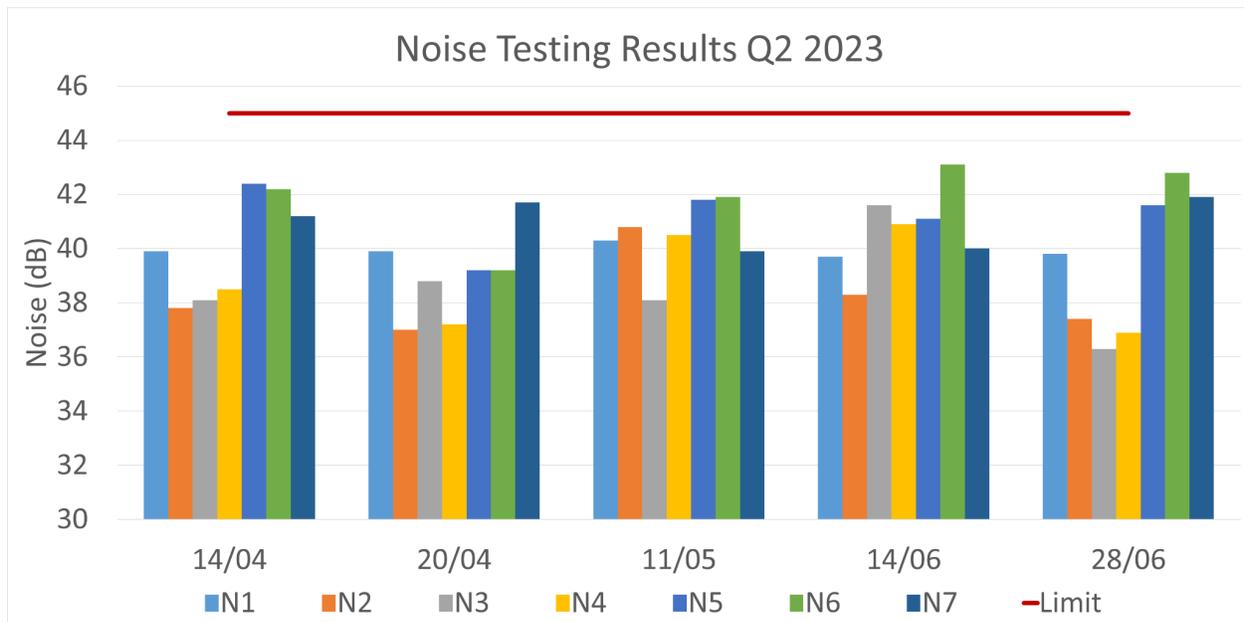


Figure 5 - Noise Testing Results Q2 2023. (Limit is 45dB under normal operating conditions)

2.3 Blasting

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

Ground Vibration

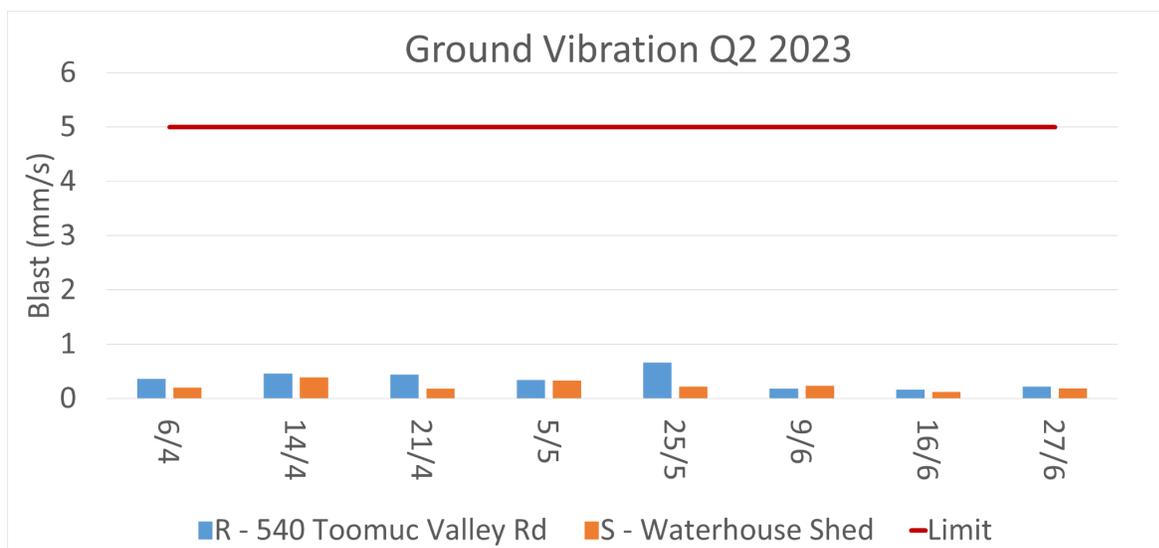


Figure 6 - Blasting; Ground Vibration Results Q2 2023 (Limit is 5mm/s for 95% of blasts in a 12 month period)

Air Blast

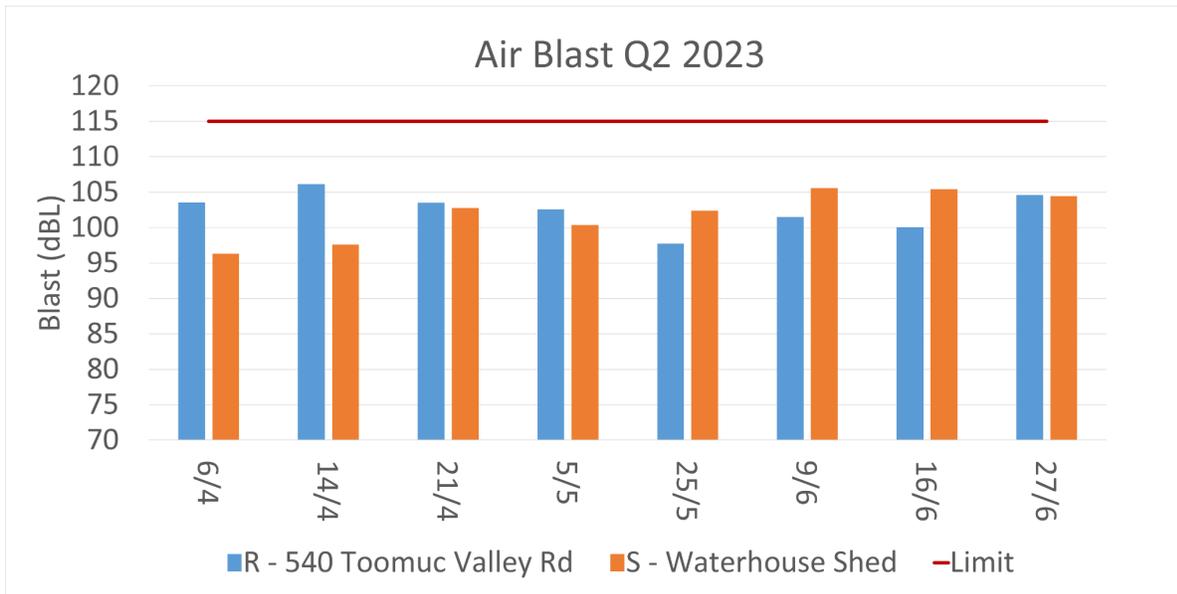


Figure 7 - Blasting; Air Blast Results Q2 2023 (Limit is 115 dBL for 95% of blasts in a 12 month period)

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.

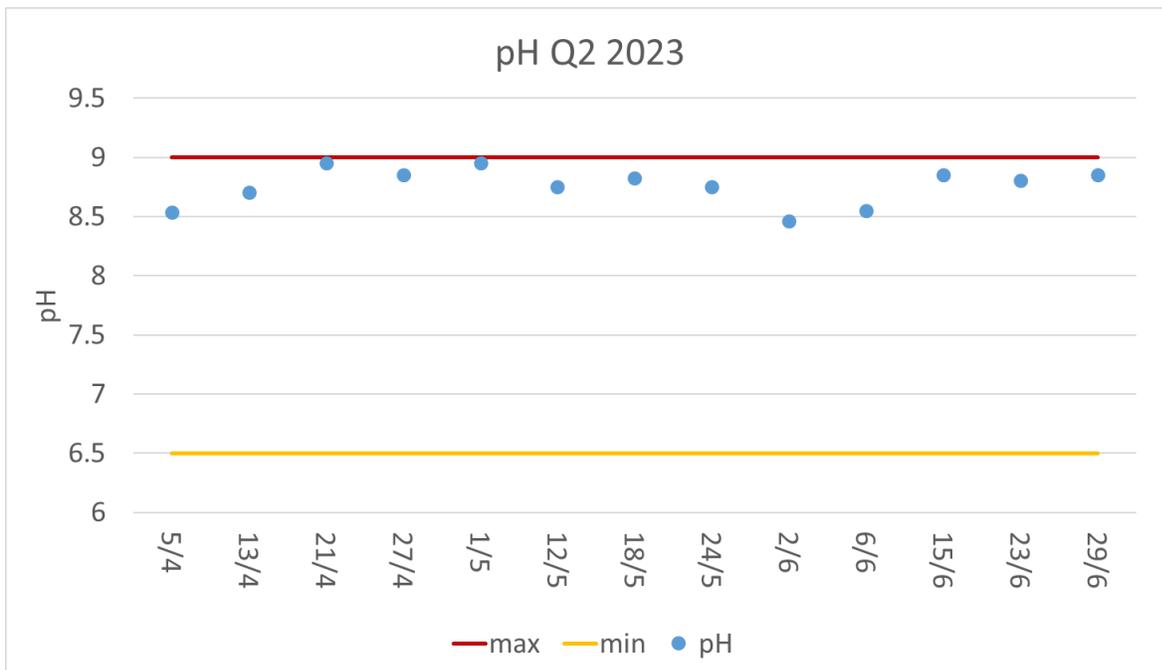


Figure 8 - Discharge Water pH results Q2 2023

Turbidity – Clarity of water Maximum 30NTU.

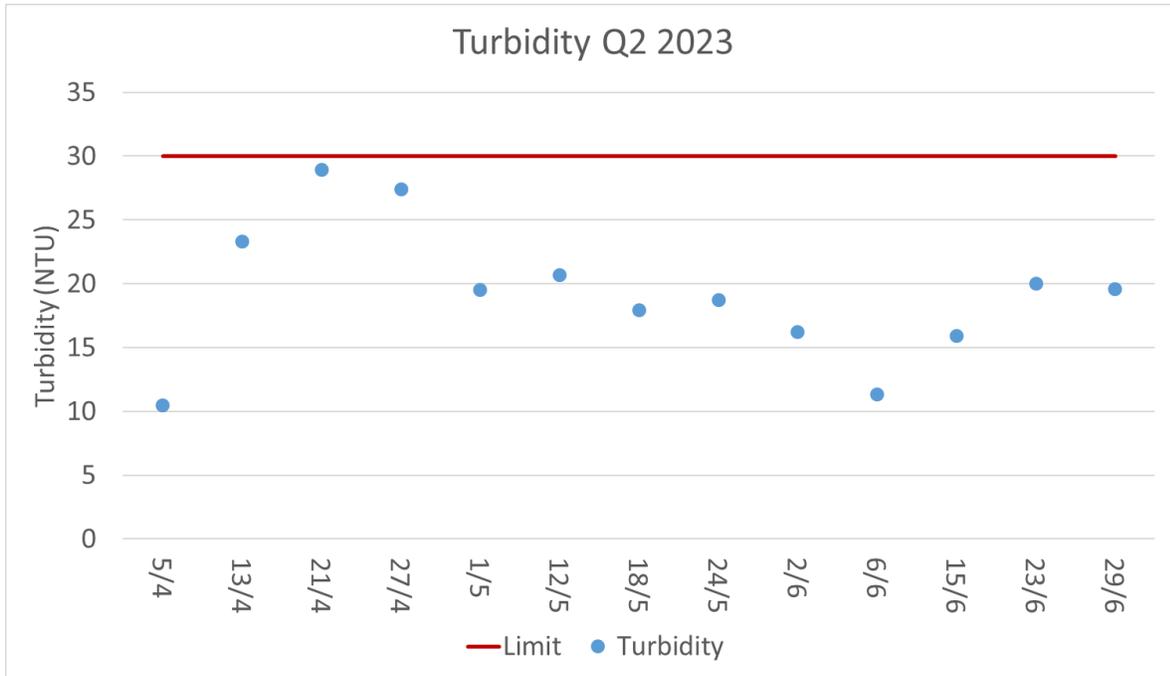


Figure 9- Discharge Water Turbidity results Q2 2023

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

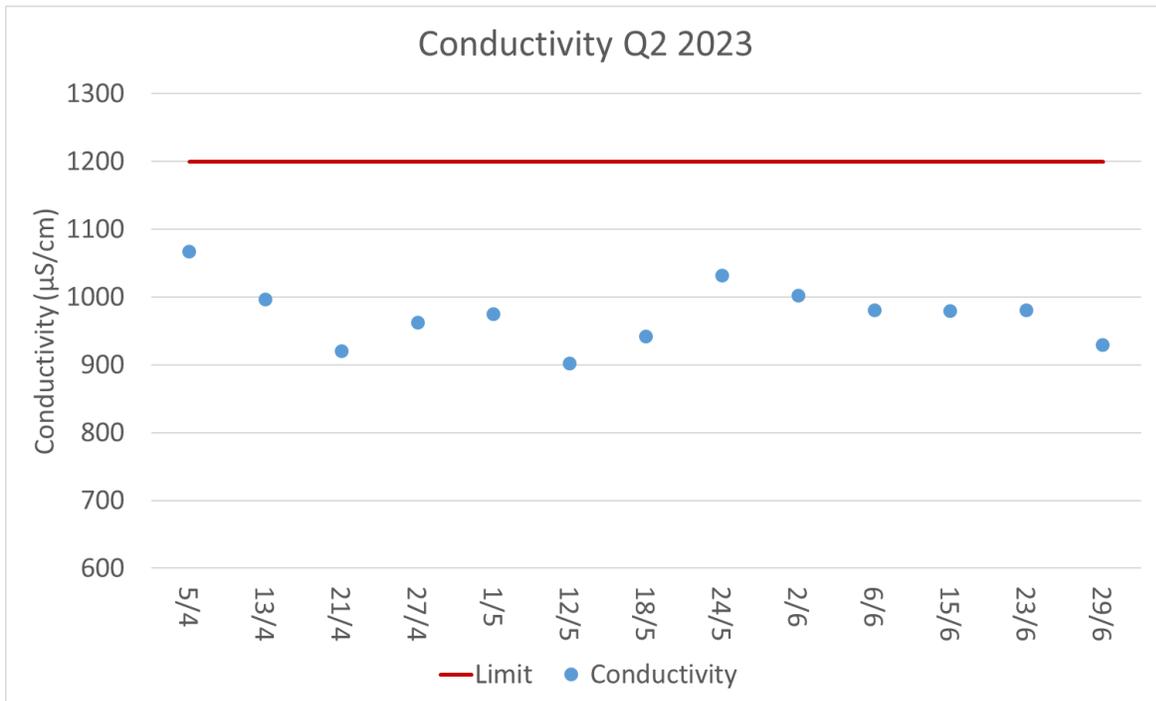


Figure 10 - Discharge Water Conductivity results Q2 2023

Bore Water Measurements

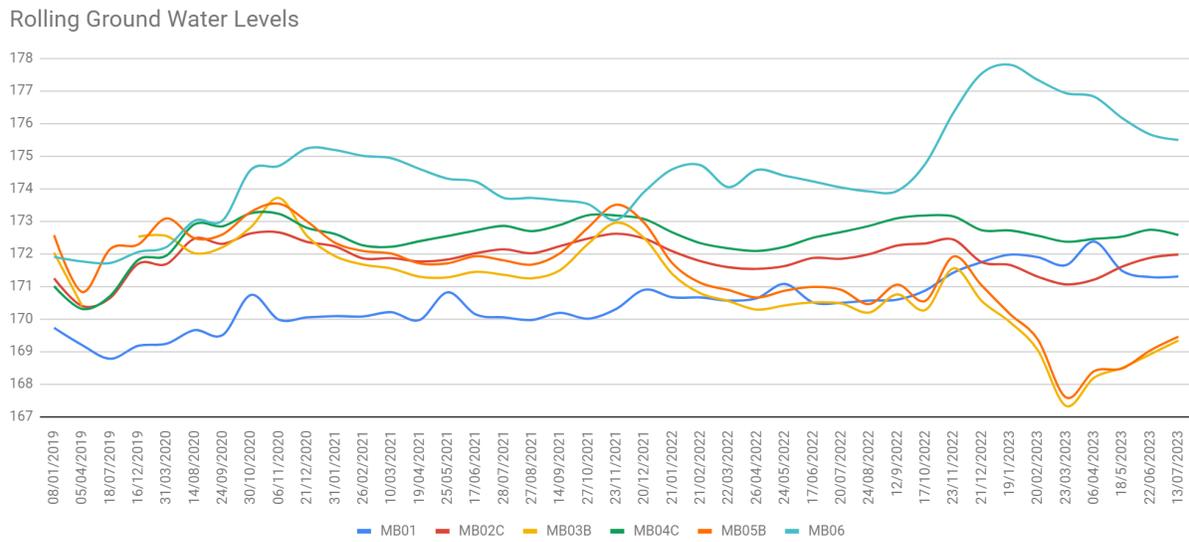


Figure 11 - Groundwater levels 2019 to present.

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 12 - In Pit Water Identification

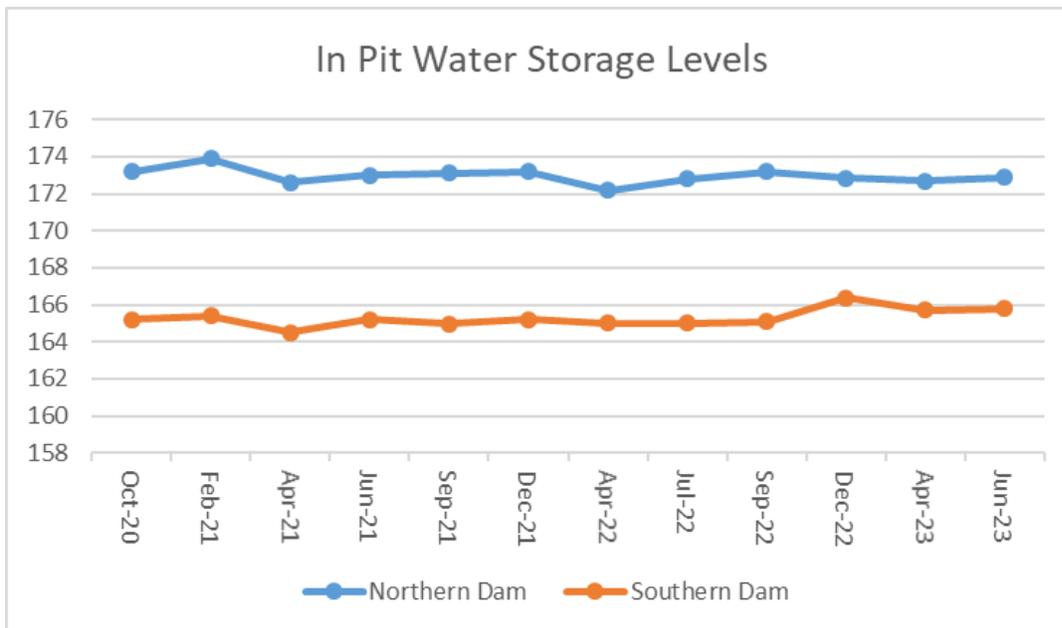


Figure 13 - In Pit Storage Levels October 2020 - Present

2.5 Waste

2023 Q2		
Categories	Rolling 12 Month Tonnes	Av / month
Landfill	*5.36t	0.536t
Category	YTD	
Steel	**153.4t	
Recycled Oil	9,400L	
Prescribed	1.06t	
Interceptor waste/ Hydrocarbon contaminated water	16,300L	
Other		
Manganese - Recycled	6.48t	
Conveyor belt - Recycled	7.81t	

Figure 14 - Quarry Waste Generation Summary of Q2 2023

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

**Disposal of 3 old mining trucks (120 tonnes) and grave yard clean up (25.4 tonnes)

2.6 Truck Tarping

Tarping compliance Q2 2023

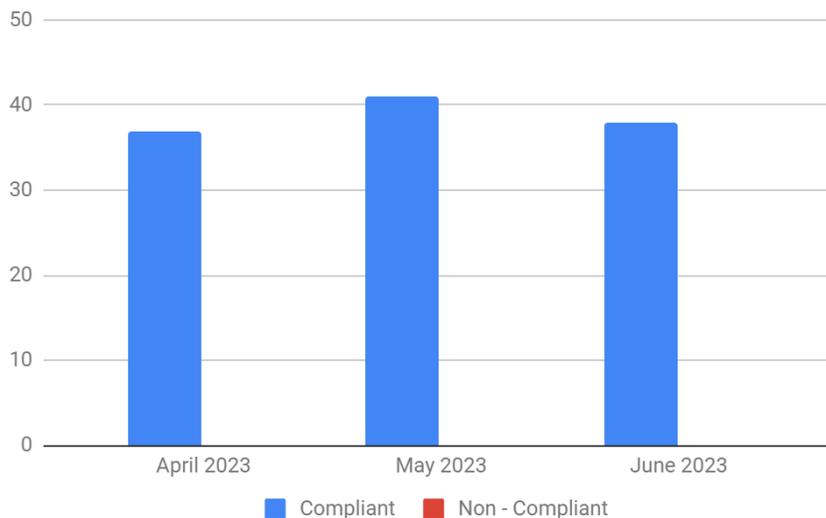


Figure 15 - Tarping visual checks of Q2 2023

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 2022

EMP Reference	Rating	Non Conformance	Recommendation	Status
B-2.1.3 Air Quality	MNC	The site weather station was not functioning for extended periods during the year 2022-23.	Rectify or replace the weather monitoring equipment at the site so that it is reliably recording and logging the required data at all times.	Complete
2.4.2 Surface Water	MNC	Three (3) turbidity exceedances were recorded during the audit period, the highest being approx. 80 NTU (Licence Limit 30).	Investigate and then implement effective measures to cease the discharge from the site of sediment and/or colloid- contaminated water that causes exceedance of Licence limits.	
1.2 – Accompanying Drawings	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)	Revise the attached drawings to the LRMP so that they accurately represent the current rehabilitation program and its desired outcomes.	
2.6 - Review LRMP	MNC	The LRMP is not being reviewed annually as specified in this section of the Plan.	Holcim and the relevant stakeholders should together agree on a LRMP review frequency that best meets the environmental requirements for managing rehabilitation of the site and then formulate, agree on and commit to a review and approval timeline that enables that frequency to be met.	

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