



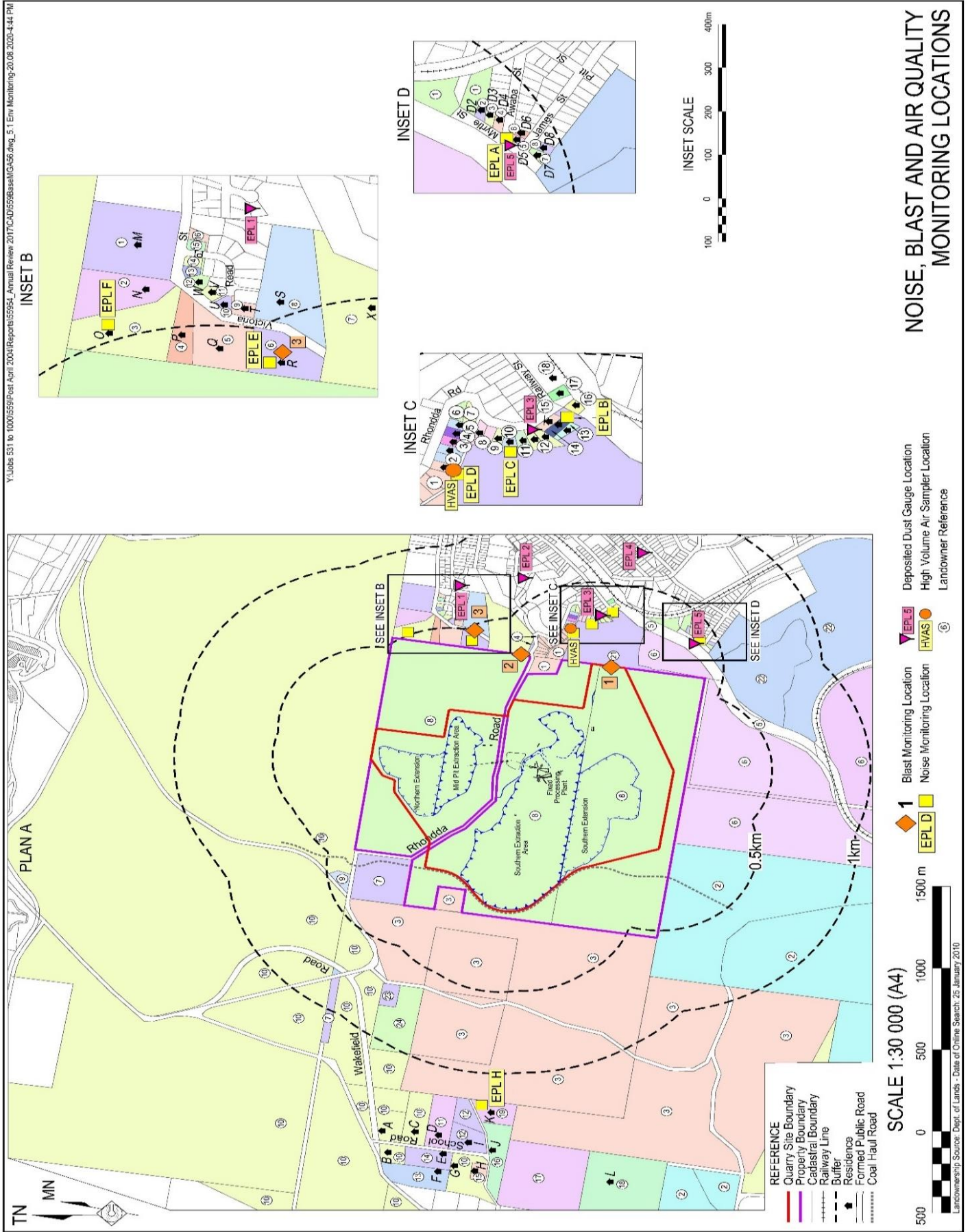
Teralba Quarry Environmental Monitoring Summary

March 2022

Environmental Protection Licence (EPL):	536
Licensee:	Metromix Pty Limited
Licensee Address:	PO Box 1295 Parramatta, NSW 2124
Premises:	Metromix Pty Limited Teralba Quarry Rhondda Road Teralba, NSW 2284
Licensee Website:	https://www.metromix.com.au/
Licensee Website - Monitoring Results:	https://www.metromix.com.au/resources/#quarry
EPA Public Register:	https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers
Prepared by:	R. W. Corkery & Co.
Sample Period:	March 2022
Data Last Data Received	26 April 2022
Date of Report	26 April 2022

Contents

- 1 Deposited Dust
- 2 Particulate Matter (PM₁₀)
- 3 Water
- 4 Meteorological Conditions
- 5 Blasting
- 6 Waste



Deposited Dust

Sample Period Start: 1/03/2022
 Sample Period End: 1/04/2022
 Sample Frequency: 30 ± 2 days
 Sample Collected By: Metromix - AL
 Date Results Received by Lab: 1/03/2022
 Date Results Received by Metromix: 10/03/2022

EPA Identification No.	Location	Criteria (g/m ² /month)	Insoluble Solids (g/m ² /month)	Ash Fraction (g/m ² /month)	% Ash Fraction
1	Hillside Crescent	4.0	0.5	0.1	20
8	Rodgers Street	4.0	0.3	0.1	33
9	Rhondda Road	4.0	0.6	0.2	33
11	Myrtle Street	4.0	5.3	4.1	77
23	York Street	4.0	0.3	0.2	67

Comments

No exceedances of the approved criteria were detected during the sample period. It is noted that the high dust levels at Myrtle Street can likely be attributed to the high level of rainfall experienced throughout March 2022.

26 April 2022

Deposited Dust - Year to Date

	Rhondda Road			Myrtle Street			Hillside Crescent			Rodgers Street			York Street		
	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash
Units	g/m ² /month	g/m ² /month		g/m ² /month	g/m ² /month		g/m ² /month	g/m ² /month		g/m ² /month	g/m ² /month		g/m ² /month	g/m ² /month	
EPA Approved Level	4.0			4.0			4.0			4.0			4.0		
January	0.3	0.2	67	1.8	1.0	56	0.4	0.3	75	0.4	0.2	50	0.7	0.5	71
February	0.8	0.4	50	4.9	3.6	73	0.9	0.3	33	0.8	0.3	38	1.2	0.5	42
March	0.6	0.2	67	5.3	4.1	77	0.5	0.1	20	0.3	0.1	33	0.3	0.2	67
April															
May															
June															
July															
August															
September															
October															
November															
December															
Annual Average	0.6	0.3	61.2	4.0	2.9	68.5	0.6	0.2	42.7	0.5	0.2	40.3	0.7	0.4	60.1
Annual Maximum	0.8	0.4	67.0	5.3	4.1	77.0	0.9	0.3	75.0	0.8	0.3	50.0	1.2	0.5	71.4
Annual Minimum	0.3	0.2	50.0	1.8	1.0	55.6	0.4	0.1	20.0	0.3	0.1	33.0	0.3	0.2	42.0

26 April 2022

Particulate Matter (PM₁₀)

Sample Location: EPA 3 - Rodgers Road
 Sample Frequency: 6 days

Date Sample Taken (24-hr)	Collected by	Date Results Received	PM ₁₀ µg/m ³	Monthly Average Criteria (µg/m ³)	Annual Average Criteria (µg/m ³)
5/03/2022	CBased - TD	16/03/2022	11.2	50	
11/03/2022	CBased - TD	23/03/2022	14	50	
17/03/2022	CBased - TD	31/03/2022	13.1	50	
23/03/2022	CBased - TD	31/03/2022	14.8	50	
29/03/2022	CBased - TD	17/04/2022	8	50	
Monthly Average			12.22		25/30*

*Project Approval (PA 10_0183) outlines the annual average PM₁₀ criteria to be 30µg/m³. However, EPL 536 Condition R4.5a) requires that the air quality monitoring data is assessed against the Air Impact Assessment Criteria outlined in EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. The most up to date version of this guideline was published in 2017 and outlines the annual average PM₁₀ criteria to be 25µg/m³. Metromix has considered both criteria for its review of particulate matter monitoring.

Comments

All PM₁₀ results remained below the approved criteria for the sample period.

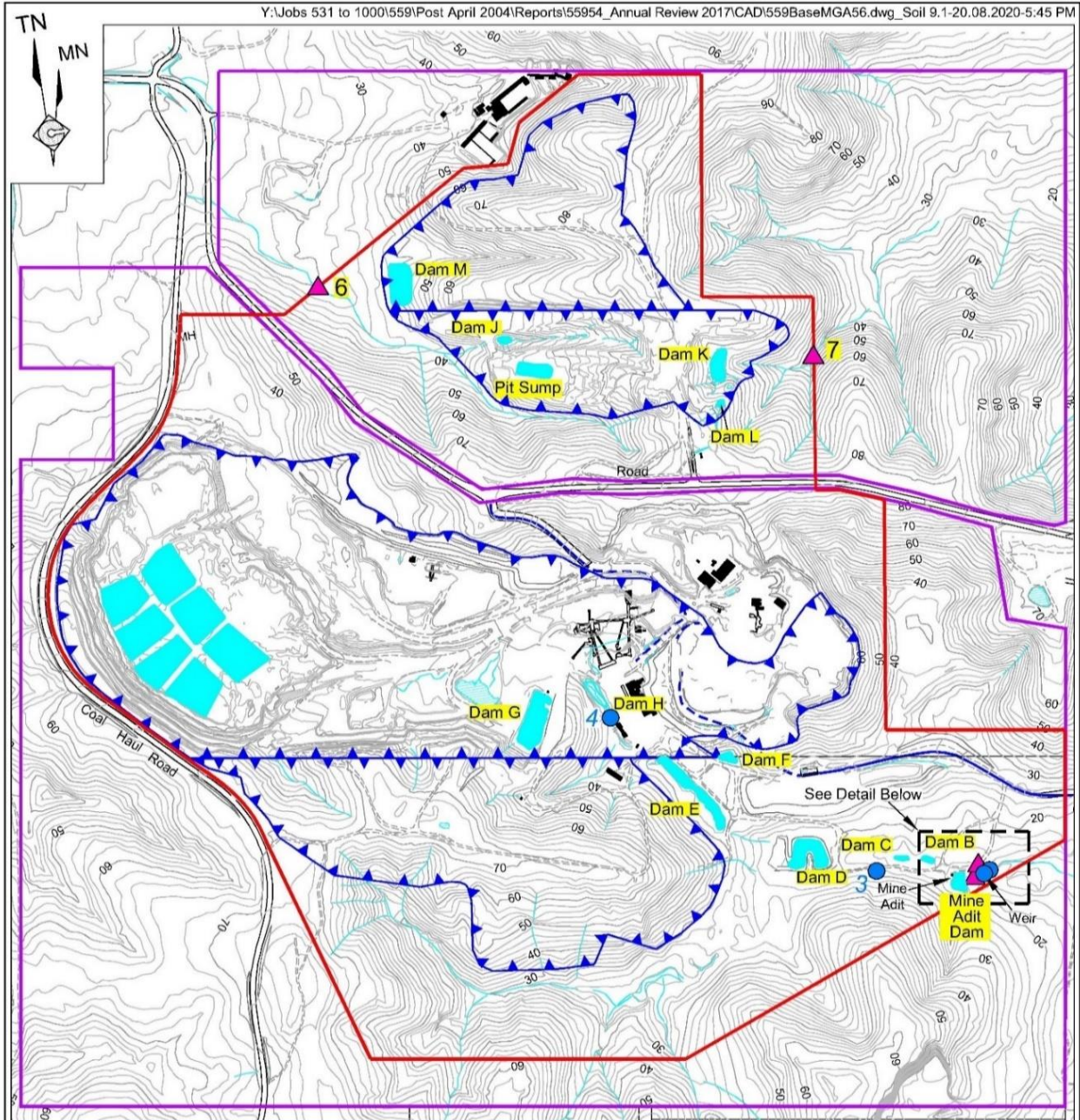
26 April 2022

Particulate Matter (PM₁₀) - Year to Date

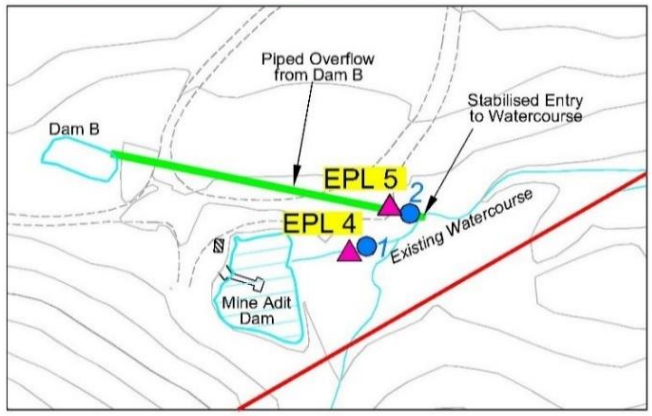
Date	PM ₁₀ (µg/m ³)	Monthly Average (µg/m ³)	Year to Date Average (µg/m ³)	24-Hr Criteria (µg/m ³)	Comments
4/01/2022	9.3		9.3	50	
10/01/2022	14.5		11.9	50	
16/01/2022	15.4		13.1	50	
22/01/2022	8		11.8	50	
28/01/2022	11.4	11.7	11.7	50	
3/02/2022	16.1		12.5	50	
9/02/2022	13.1		12.5	50	
15/02/2022	21.2		13.6	50	
21/02/2022	15.4		13.8	50	
27/02/2022	7.7	14.7	13.2	50	
5/03/2022	11.2		9.3	50	
11/03/2022	14		13.1	50	
17/03/2022	13.1		13.1	50	
23/03/2022	14.8		13.2	50	
29/03/2022	8	12.2	12.9	50	

Minimum	7.7
Maximum	21.2
Average	12.88
Standard Deviation	3.71
24-hr Criteria	50
Number of Exceedences	0
Annual Average Criteria	25/30*
Annual Average Criteria Exceeded	No
*See explanation on previous page.	

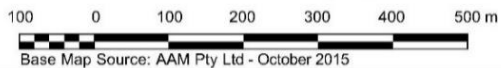
26 April 2022



- REFERENCE
- Property Boundary
 - Quarry Site Boundary
 - Extraction Area
 - Dam C Dam (and reference)
 - Access Road to Public Road Network
 - Contour (m AHD)(Interval =1m)
 - Drainage Line
 - Sealed Road
 - Unsealed Road / Track
 - ▲ 4 EPL Licensed Monitoring Location
 - 1 Flowmeter



SCALE 1:10 000 (A4)



Base Map Source: AAM Pty Ltd - October 2015

WATER MONITORING

Water**Water Monitoring****EPL Point 4 - Monthly Monitoring**

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
7/03/2022	7.30am	Metromix - AL	26/04/2022		6.96	1360	6	<5	-

EPL Point 5 - Monitoring Daily During Discharge

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
8/03/2022	1.30pm	Metromix - AL	15/03/2022		6.78	664	10	<5	-

EPL Point 6 - Monthly Monitoring

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
No discharge occurred at this location and therefore no monitoring was required									

EPL Point 7 - Monthly Monitoring

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
No discharge occurred at this location and therefore no monitoring was required									

Flow Meter Records

EPA Identified	Location	Description	Sample Period	Daily Average Flow	Monthly Total Flow ML
4	Adit Dam	Adit Dam to Creek (off site)	1/03/2022 to 1/04/2022	2.07	64.1
5	Dam B	Discharge from Dam B (from Quarry)	1/03/2022 to 1/04/2022	0.08	2.5
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	1/03/2022 to 1/04/2022	2.79	86.5

Comments

All water monitoring results remained within the approved criteria levels during the monitoring period.

Water - Year to Date**EPL Point 4 : Monthly Monitoring**

	pH	EC	TSS	Oil & Grease	Comments
Units	pH Units	µS/cm	mg/L	mg/L	-
EPL Criterion*	6.5-8.5	NA	<50	10	-
ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	<5	-
January	7.13	1830	<5	<5	-
February	7.1	2010	6	<5	-
March	6.96	1360	6	<5	-
April					
May					
June					
July					
August					
September					
October					
November					
December					

EPL Point 5 : Monitoring During Discharge

	pH	EC	TSS	Oil & Grease	Comments
Units	pH Units	µS/cm	mg/L	mg/L	-
EPL Criterion*	6.5-8.5	NA	<50	10	-
ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	-
March	6.78	664	10	<5	-

March 2022
26 April 2022

Flow Meter Records

EPA Identifier	Location	Description	Date	Monthly
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	4/01/2022 - 1/02/2022	100.8
			1/02/2022 - 1/03/2022	107.5
			1/03/2022 - 1/04/2022	86.5

EPA Identified	Location	Description	Date	Monthly
5	Dam B	Discharge from Dam B (from Quarry)	4/01/2022 - 1/02/2022	2.1
			1/02/2022 - 1/03/2022	0.0
			1/03/2022 - 1/04/2022	2.5

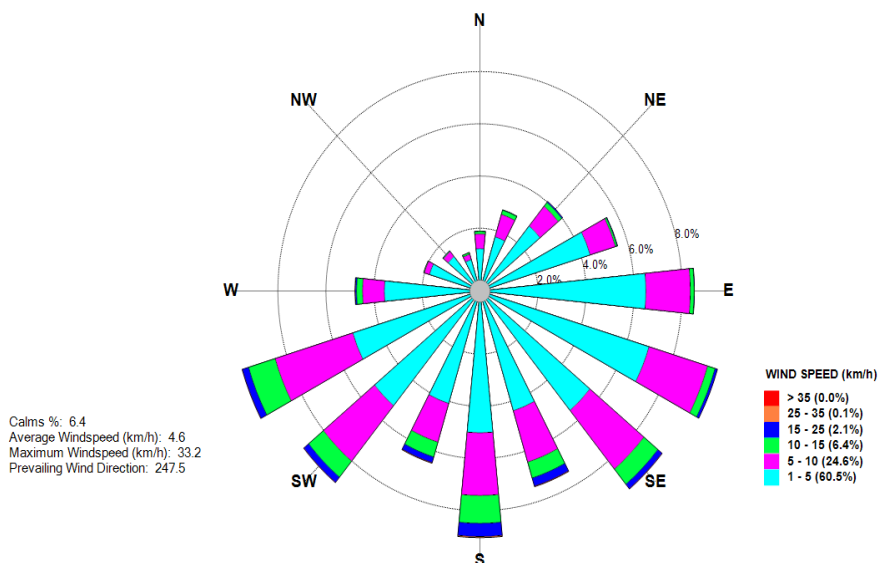
EPA Identified	Location	Description	Date	Monthly
4	Adit Dam	Adit Dam to Creek (off site)	4/01/2022 - 1/02/2022	36.9
			1/02/2022 - 1/03/2022	39.8
			1/03/2022 - 1/04/2022	64.1

Meteorological Conditions

Monitoring Location: Mid-Pit Entrance
Monitoring Frequency: Continuous

Windrose

Metromix Teralba - Windrose
MARCH 2022



March 2022
20 April 2022

Monthly Summary

Date	Mean Wind Direction (°)	Mean Wind Speed (km/h)	Daily Rainfall (mm)	Mean Sigma Theta	Max Temperature (°C) at 2m	Min Temperature (°C) at 2m
01/03/22	120.5	4.6	26.4	34.6	22.4	19.6
02/03/22	110.4	3.4	36.8	36.0	24.4	19.6
03/03/22	174.0	7.6	39	40.8	23.8	20
04/03/22	150.3	6.4	4.6	41.1	27	21.6
05/03/22	122.0	3.2	0	30.0	28.2	20.3
06/03/22	179.3	5.2	16.8	42.6	28	19.4
07/03/22	116.8	4.5	23.6	34.4	26.8	21
08/03/22	190.7	5.3	26	36.0	25.8	19.1
09/03/22	224.5	8.8	0	30.2	24.8	17.8
10/03/22	204.3	6.0	0	37.3	24.4	15.2
11/03/22	162.3	3.9	0	34.9	25.2	15.4
12/03/22	158.3	2.9	1.2	26.9	24.9	15.0
13/03/22	169.2	3.0	0.4	27.8	26.0	14.8
14/03/22	164.7	3.9	0	34.8	26.0	16.4
15/03/22	181.7	3.8	0.6	39.8	26.0	17.1
16/03/22	162.5	3.1	1.6	30.3	26.4	18.0
17/03/22	155.0	2.9	0	28.2	27.2	17.6
18/03/22	118.9	3.4	0	27.2	28.8	18.8
19/03/22	189.3	5.7	15.2	37.9	23.6	16.6
20/03/22	210.9	5.7	0	30.9	26.0	16.4
21/03/22	208.7	4.4	0	35.2	24.6	16.4
22/03/22	168.4	5.3	0	23.1	29.8	16.0
23/03/22	131.9	6.3	6.8	35.5	26.6	18.8
24/03/22	112.7	3.1	40.8	32.0	19.6	17.2
25/03/22	156.5	3.7	3.6	29.4	24.6	15.8
26/03/22	161.2	3.7	9.8	34.0	24.0	16.8
27/03/22	199.4	3.0	10.4	30.0	22.2	16.8
28/03/22	163.1	2.2	0	31.1	24.4	19.0
29/03/22	170.7	2.9	57.8	32.7	23.2	19.2
30/03/22	182.8	6.2	20	38.8	23.8	18.4
31/03/22	209.4	10.4	12	35.1	21.2	14.6

Meteorological Conditions - Year to Date

Monitored Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Rainfall (mm)	98.2	131.2	353.4										
Average Minimum Temperature (°C) at 2m	16.8	18.2	17.7										
Average Maximum Temperature (°C) at 2m	33.0	27.8	25.2										
Average Minimum Temperature (°C) at 10m	17.1	18.5	18.1										
Average Maximum Temperature (°C) at 10m	31.9	26.7	24.4										
Average Sigma Theta	34.6	34.8	33.5										
Average Solar Radiation (W/m ²)	207.9	181.7	129.8										
Average Relative Humidity (%)	75.0	73.0	80.0										

26 April 2022

Blasting

Monitoring Frequency: Each Blast
 Blast Monitoring Completed By: Orica (Blast 1 to 12)
 MAXAM (Blast 13)

Shot #	Day	Month	Time	Location	Location 1		Location 2		Location 3		Comments
					Overpressure	Vibration	Overpressure	Vibration	Overpressure	Vibration	
					dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	
1	19	January	13:39:30	Stage 1C	104.7	0.6	100.8	0.06	NM	NM	Nil Trigger on monitor at bottom wheel wash
2A & 2B	1	February	15:55:00	Stage 2A	103.9	0.7	101.4	0.06	NM	NM	
3	14	February	14:31:01	Stage 1C	NT	NT	109.8	0.18	NM	NM	
4	28	February	15:54:47	Stage 2A	NT	NT	NT	NT	NM	NM	Nil trigger on any blast monitors
5	3	March	14:27:00	Stage 1C	106	0.08	NT	NT	NM	NM	
6	23	March	15:05:00	Stage 2A	102.2	1.01	NT	NT	NM	NM	

NT Not Triggered
NM Not Monitored

Blasting Criteria

Parameter	Units of Measure	Limit	
		95% of blasts per year	100% of blasts
Airblast Overpressure (Linear Peak)	decibels (dB(L))	115	120
Ground Vibration (Peak Particle Velocity)	millimeters per second	5	10

Comments

Two blasting events occurred during the monitoring period. All blast monitoring results were within the approved criteria.

Waste Management

Waste Removal Summary

Month	January	February	March	April	May	June	July	August	September	October	November	December
Items	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
General Waste Bin (10m ³)												
General Waste Bin (4.5m ³)												
General Waste Bin (6m ³)												
General Waste Bin (20m ³)	1	1	1									
Paper & Cardboard Bin (3m ³)			1									
Shredded Paper Bin (240L)			1									
Co Mingled Recycling (2 x 240 L)	4	4	4									
Tonner Cartridges												
Waste Oil (L)	2100											
Scrap Steel (t)												
Timber (m ³)												
Engine Coolant (L)												
Oil Filters (240L bin)												
Batteries												
Oily Rags (240L bin)												
Aerosols (120L bin)												
Tyres												
Other												
Oily Water (L)												
Grease Waste (L)												

26 April 2022