Monthly Environmental Monitoring Report

Yancoal Mount Thorley Warkworth

July 2022

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Revision History

Version No.	Version Details	Document Status	Date
1.0	**Environment and Community Advisor**	**Final**	**10/11/2022**

1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1 July to 31 July 2022.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

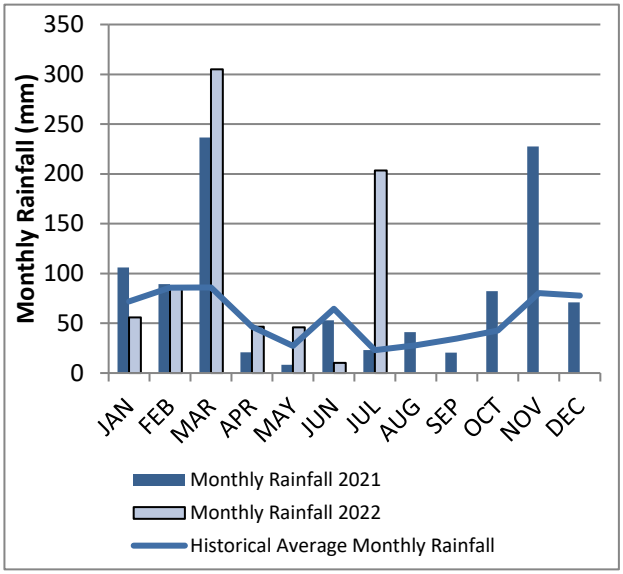
Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to **Figure 3**: Air Quality Monitoring Locations).

2.1.1 Rainfall

Rainfall for the reporting period is summarised in **Table 1**. The year-to-date monthly rainfall totals, 2022 monthly rainfall totals and historical average monthly rainfall trend are shown in **Figure 1**.

Table 1: Monthly Rainfall MTW

2022	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
July	203.4	753.8



Note: The historical average monthly rainfall is calculated from 2007 to 2021 monthly totals

Figure 1: Rainfall Trend YTD

2.1.2 Wind Speed and Direction

Winds from the south and northwest were dominant during the reporting period as shown in **Figure 2.**

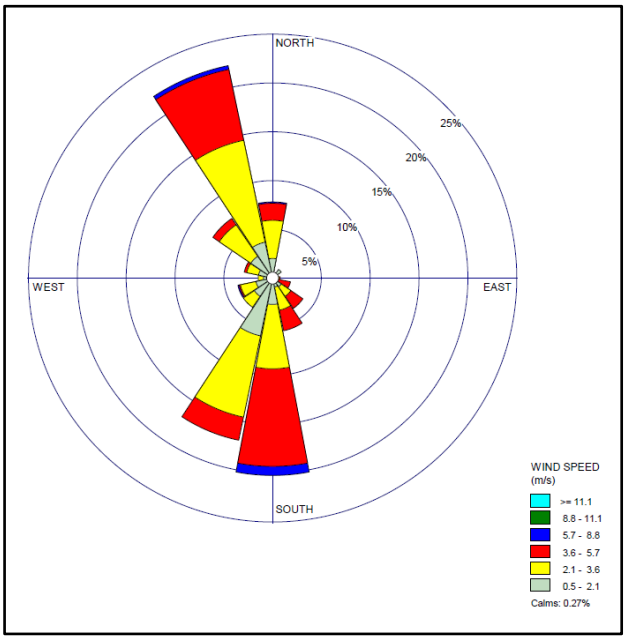


Figure 2: Charlton Ridge Wind Rose – July 2022

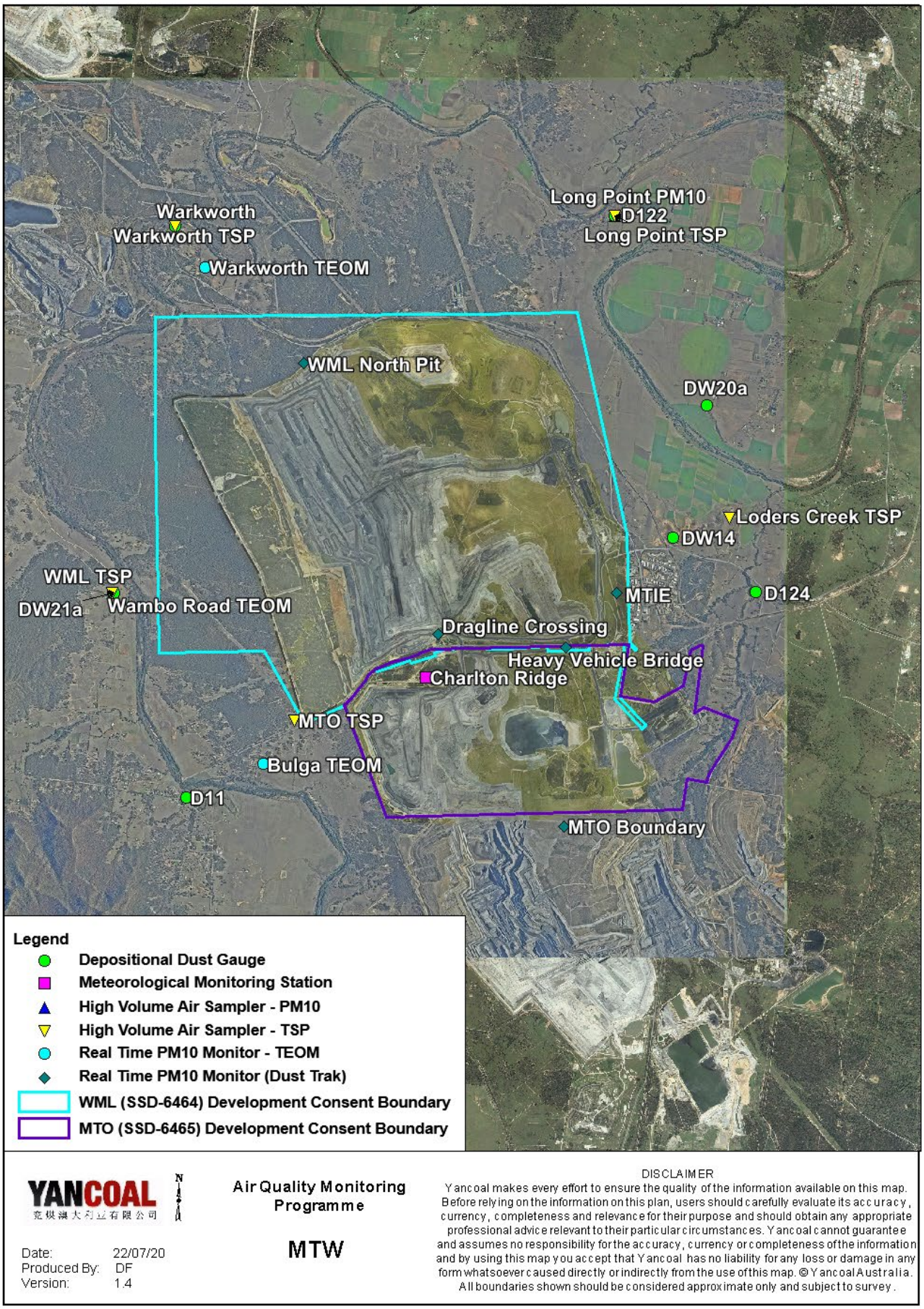


Figure 3: Air Quality Monitoring Locations

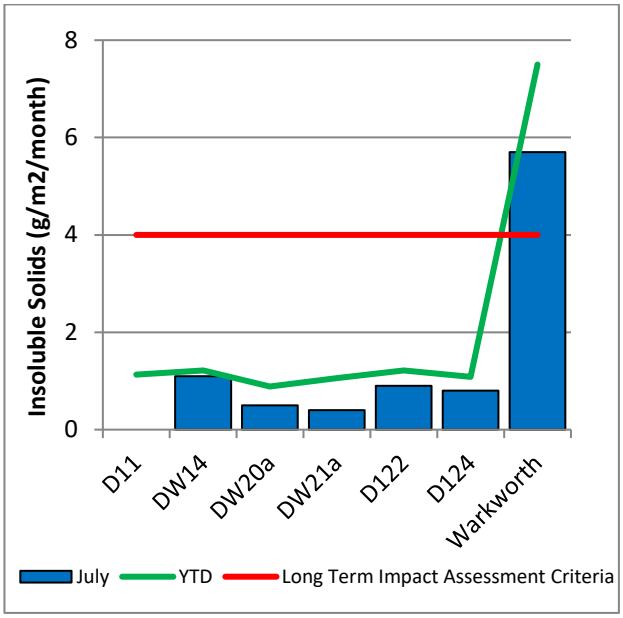
2.2 Depositional Dust

To monitor air quality, MTW operates and maintains a network of seven depositional dust gauges, situated on private and mine owned land surrounding MTW.

During the reporting period the Warkworth monitor recorded a monthly result above the long-term impact assessment criteria of 4.0 g/m2 per month. There is no evidence to suggest that the Warkworth result is contaminated. Accordingly, the result will be included in the annual average calculation. Field notes associated with D11 confirm the presence of dirt and insects. As such the result (443 g/m2) is considered contaminated and will be excluded from calculation of the annual average.

Figure 4 displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

An annual assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2022 Annual Review Report.



Note: D11 (443 g/m2) was determined to be contaminated. The result is not shown due to the scale of graph.

Figure 4: Depositional Dust – July 2022

2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM_{10}). The location of these monitors can be found in **Figure 3**. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

2.3.1 HVAS PM_{10} Results

Figure 5 shows the individual PM_{10} results at each monitoring station against the short-term impact assessment criteria of 50µg/m³.

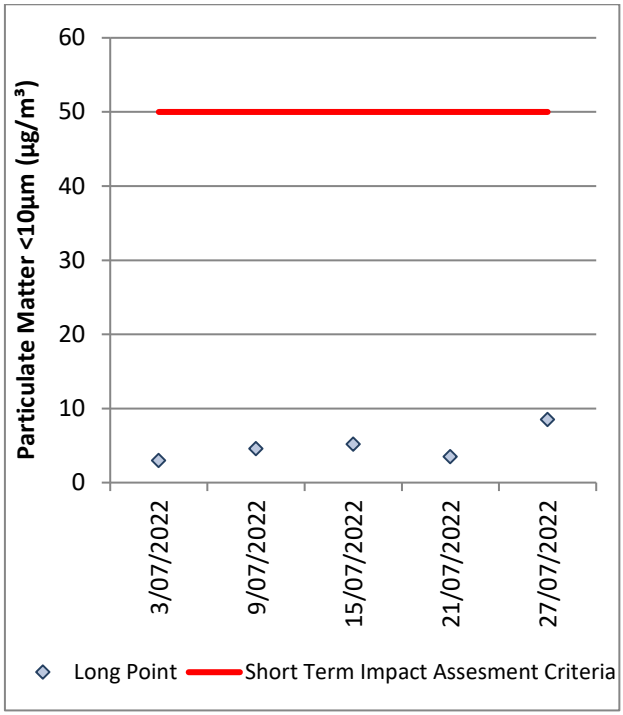


Figure 5: Individual PM10 Results – July 2022

Figure 6 shows the annual average PM10 result against the long term impact assessment criteria.

An assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2022 Annual Review Report.

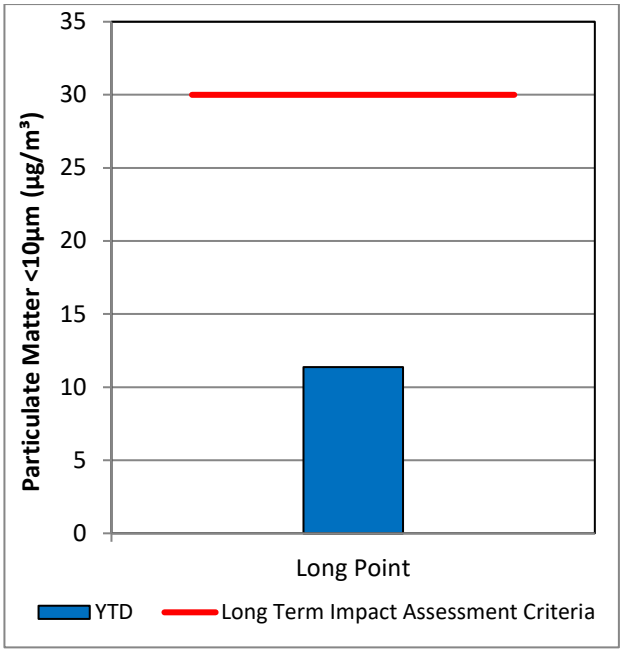


Figure 6: Annual Average PM_{10} – July 2022

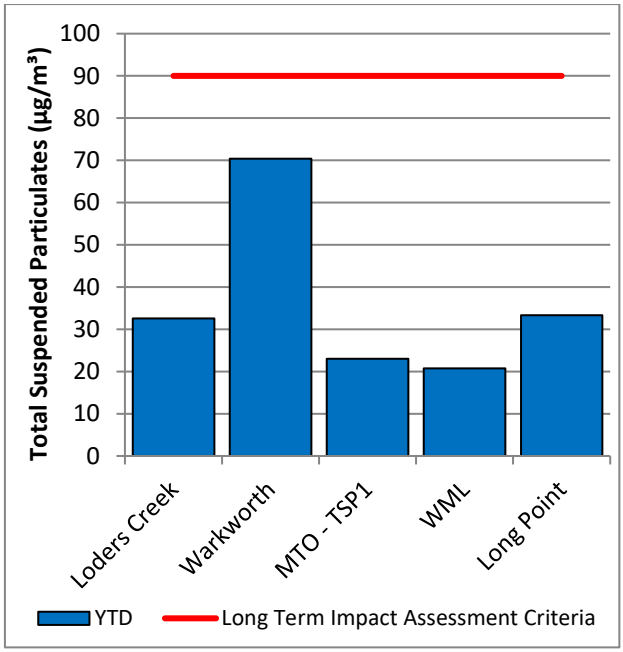


Figure 7: Annual Average Total Suspended Particulates – July 2022

2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long-term impact assessment criteria of 90µg/m³.

An assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2022 Annual Review Report.

2.3.3 Real Time PM_{10} Results

MTW maintains a network of real time PM_{10} monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating internal alerts when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in **Figure 8**, including the daily 24-hour average PM_{10} result and the annual PM_{10} average. The Wambo Rd monitor was flood damaged and so data was not available until 28 July.

2.3.4 Real Time Alarms for Air Quality

During July, the real time monitoring system generated 33 automated air quality related alerts, including 10 alerts for adverse meteorological conditions and 23 alerts for elevated PM_{10} levels.

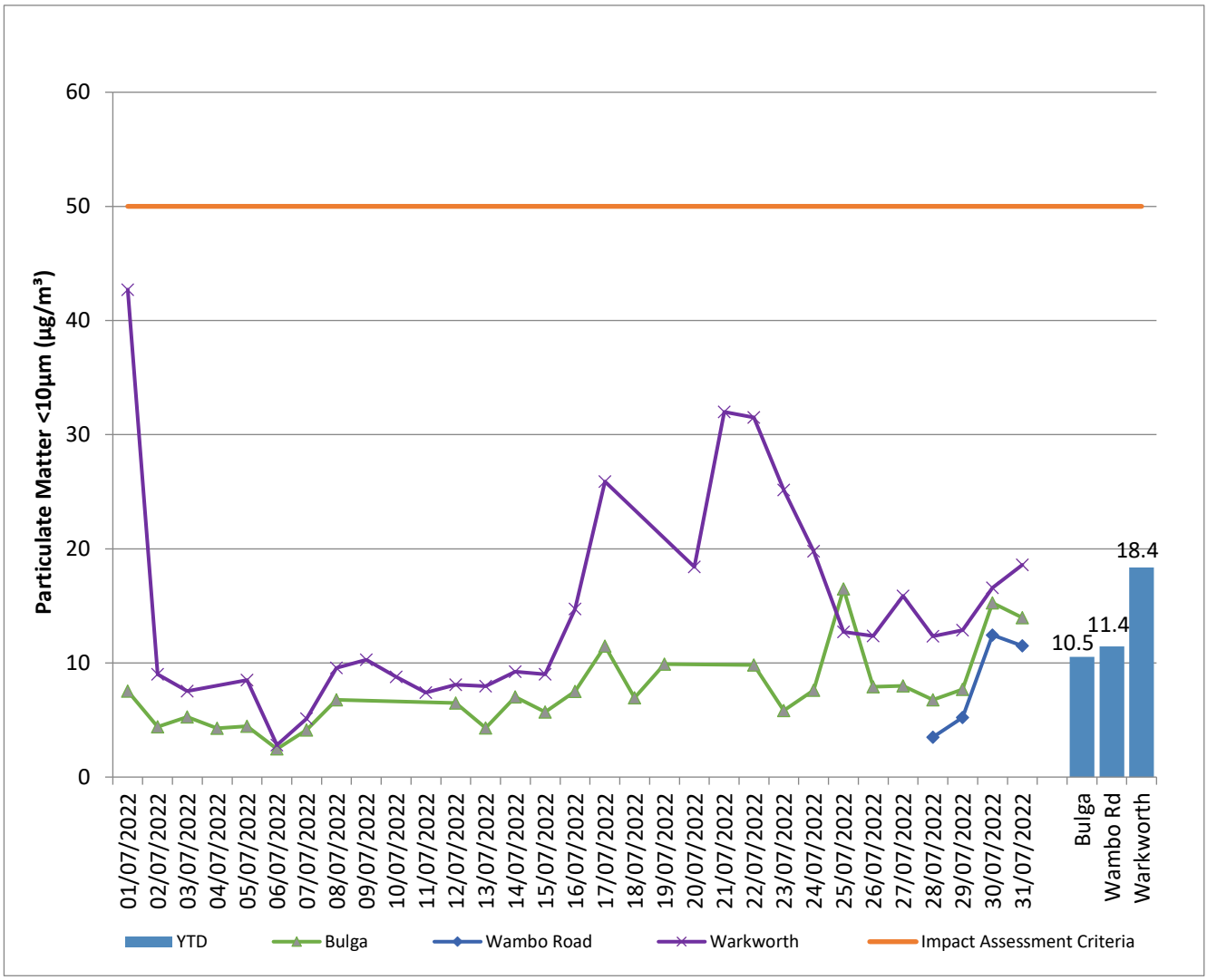


Figure 8: Real Time PM_{10} daily 24hr average (line graphs) and YTD annual average (column graphs) – July 2022

3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to record background water quality and to monitor the potential impact of mining on the river system. Other Hunter River tributaries are also monitored.

Results of monitoring are reported quarterly, next available in the September 2022 report.

3.2 HRSTS Discharge

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points located at Dam 1N and Dam 9S. Discharges can only take place subject to HRSTS regulations.

During the reporting period licenced HRSTS discharge from Dam 9S (EPL 1976 Point 4) occurred from 6 July to 20 July 2022 discharging a total of 1,025 ML.

3.3 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Groundwater results are reported quarterly, next available in the September 2022 report.

4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in **Figure 15**.

4.1 Blast Monitoring Results

During July 2022, 15 blasts were initiated at MTW. **Figure 9** to **Figure 14** show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in **Table 2**.

Table 2: Blasting Limits

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period at WML or MTO
120	0%
Ground Vibration (mm/s)	**Comments**
5	5% of the total number of blasts in a 12 month period at WML or MTO
10	0%

During the reporting period no blasts exceeded the 115dB(L) threshold for airblast overpressure and no blast exceeded the 5mm/s criteria for ground vibration.

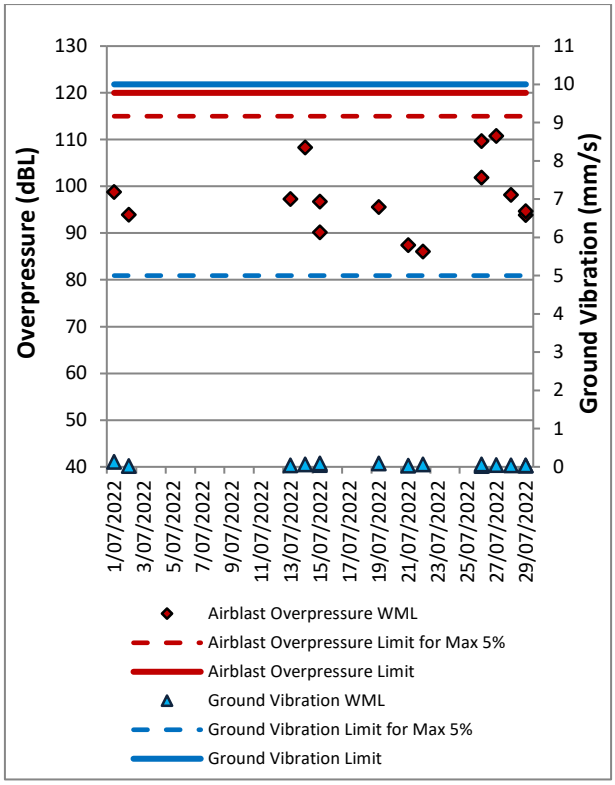


Figure 9: Abbey Green Blast Monitoring Results – July 2022

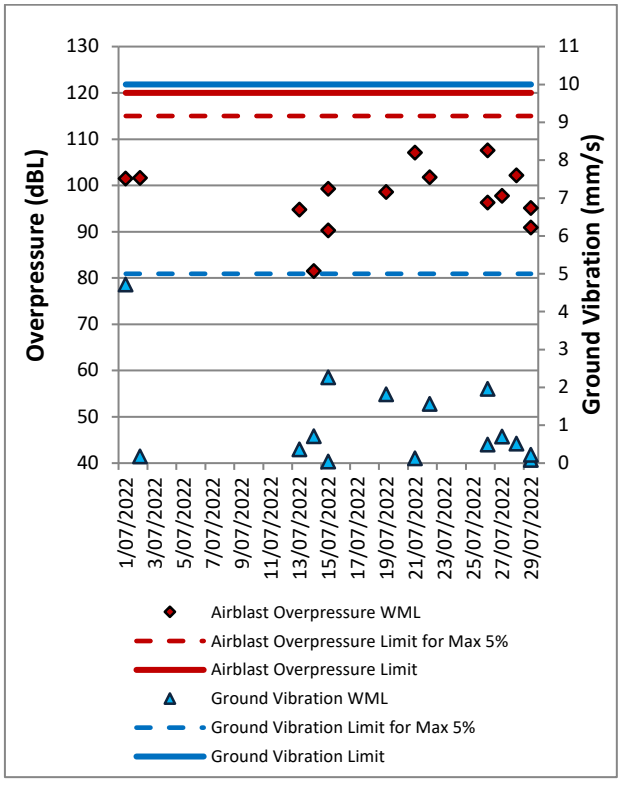


Figure 10: Bulga Village Blast Monitoring Results – July 2022

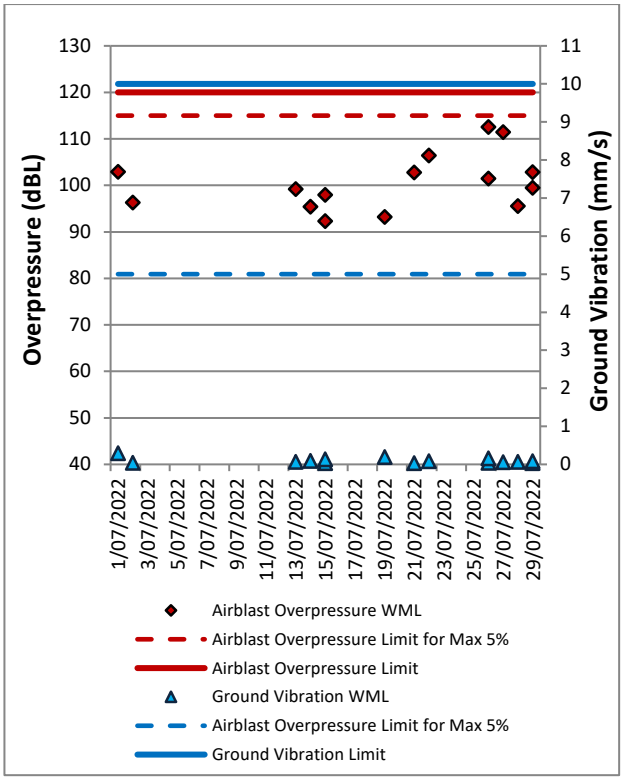


Figure 11: MTIE Blast Monitoring Results – July 2022

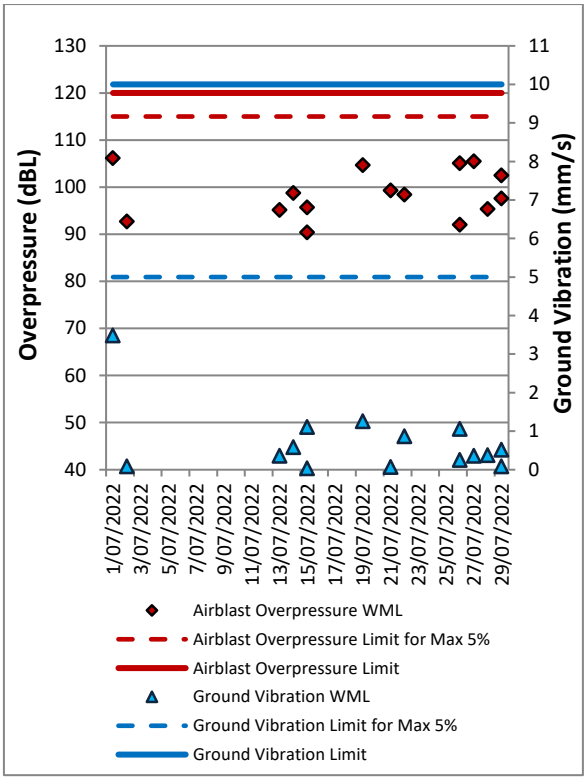


Figure 13: Wambo Road Blast Monitoring Results – July 2022

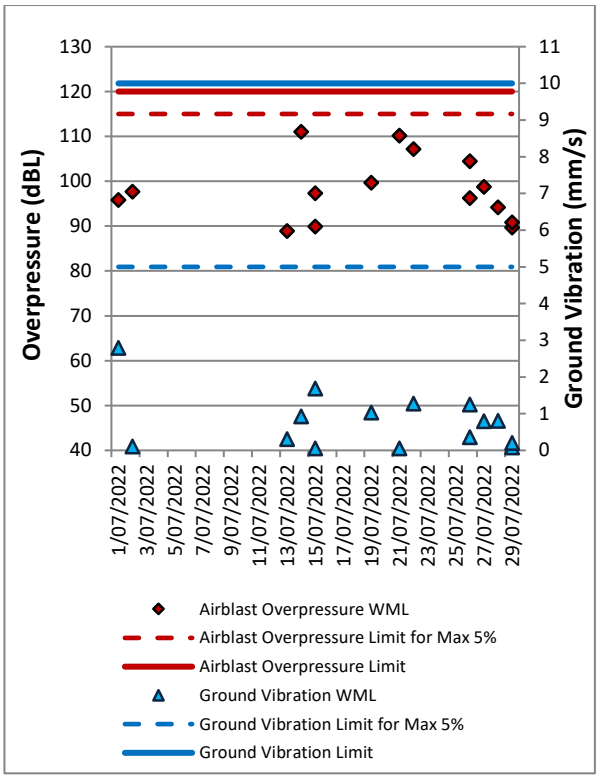


Figure 12: Wollemi Peak Road Blast Monitoring Results – July 2022

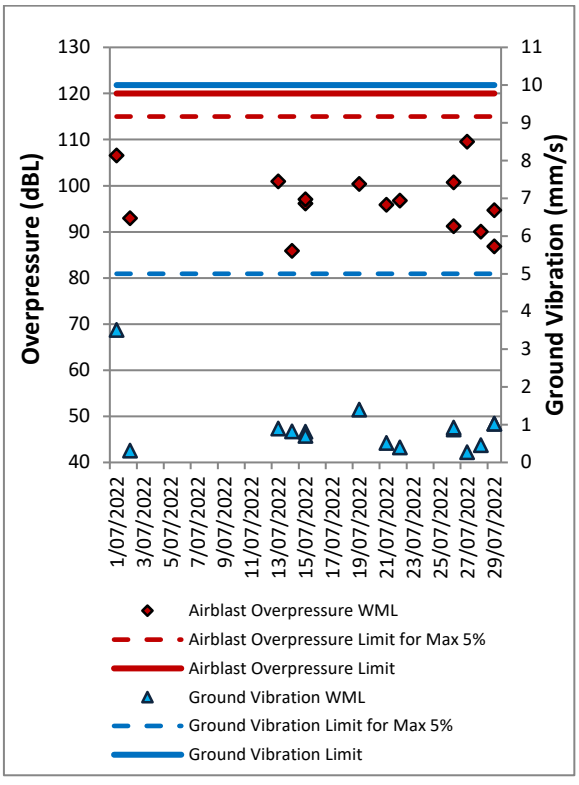


Figure 14: Warkworth Blast Monitoring Results – July 2022

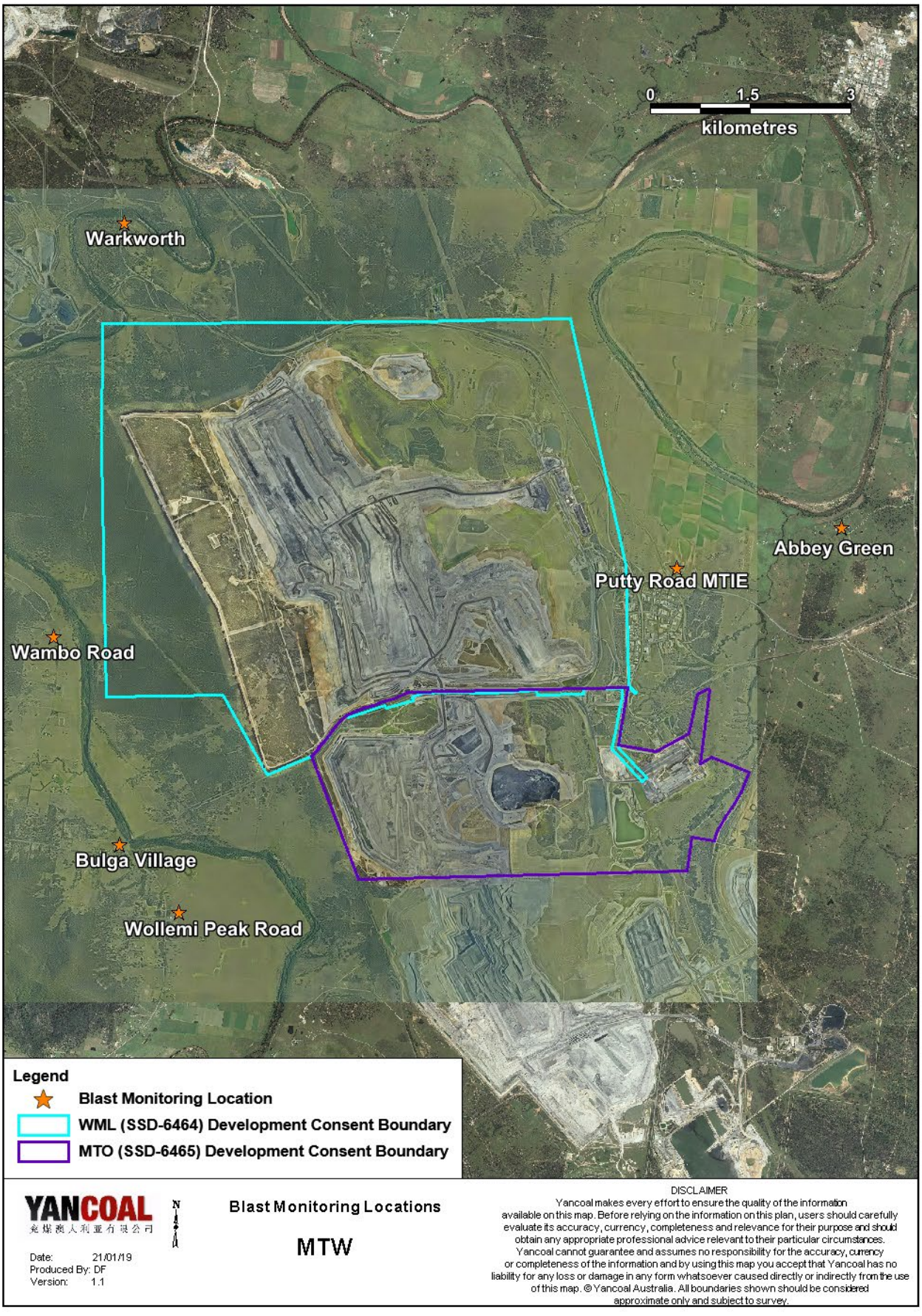


Figure 15: MTW Blast Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Real time noise monitoring also occurs at five sites surrounding MTW. Noise monitoring locations are displayed in **Figure 16**.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the night of 20 July 2022. Measurements complied with the relevant criteria, with the exception of WML levels at Inlet Road, Inlet Road West and Wambo Road, where noise levels were increased by the applicability of a low frequency modifying factor (refer to **Table 7**). Follow up monitoring conducted on 27 July 2022 (as required by the MTW Noise Management Plan) complied with the relevant criteria at the remeasured locations. Results are detailed in **Table 3 to Table 6.**

5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in **Tables 3** and **4**.

Table 3: $L_{Aeq,\ 15\ minute}$ Warkworth Impact Assessment Criteria – July 2022

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML L_{Aeq} dB[2,3]	Exceedance[3,4]
Bulga RFS	20/07/2022 23:59	3.7	D	37	No	NM	NA
Bulga Village	20/07/2022 23:34	3.3	D	38	No	33	NA
Gouldsville	20/07/2022 21:25	2.4	D	38	Yes	IA	Nil
Inlet Rd	20/07/2022 21:29	2.4	D	37	Yes	**39**	**2**
Inlet Rd West	20/07/2022 21:00	2.5	D	35	Yes	**37**	**2**
Long Point	20/07/2022 21:00	2.5	D	35	Yes	IA	Nil
South Bulga	21/07/2022 0:45	3.2	D	35	No	30	NA
Wambo Road	20/07/2022 21:57	2.5	D	38	Yes	**45**	**7**
Inlet Rd[5]	27/07/2022 21:24	2.5	D	37	Yes	IA	Nil
Inlet Rd West[5]	27/07/2022 21:00	3.0	D	35	Yes	IA	Nil
Wambo Road[5]	27/07/2022 21:48	2.7	D	38	Yes	IA	Nil

Notes:
1. Noise criteria apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LAeq,15minute attributed to WML, including modifying factors if applicable;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.
5. Followup measurement.

Table 4: $L_{A1,\ 1\ minute}$ Warkworth - Impact Assessment Criteria – July 2022

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML $L_{A1,\ 1min}$ dB[2,3]	Exceedance[3,4]
Bulga RFS	20/07/2022 23:59	3.7	D	47	No	NM	NA
Bulga Village	20/07/2022 23:34	3.3	D	48	No	36	NA
Gouldsville	20/07/2022 21:25	2.4	D	48	Yes	IA	Nil
Inlet Rd	20/07/2022 21:29	2.4	D	47	Yes	44	Nil
Inlet Rd West	20/07/2022 21:00	2.5	D	45	Yes	42	Nil
Long Point	20/07/2022 21:00	2.5	D	45	Yes	IA	Nil

South Bulga	21/07/2022 0:45	3.2	D	45	No	34	NA
Wambo Road	20/07/2022 21:57	2.5	D	48	Yes	50	2
Inlet Rd[5]	27/07/2022 21:24	2.5	D	47	Yes	IA	Nil
Inlet Rd West[5]	27/07/2022 21:00	3.0	D	45	Yes	IA	Nil
Wambo Road[5]	27/07/2022 21:48	2.7	D	48	Yes	IA	Nil

Notes:
1. Noise criteria apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LA1,1minute attributed to WML;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.
5. Followup measurement.

5.1.2 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in **Table 5** and **6**.

Table 5: $L_{Aeq,\ 15minute}$ Mount Thorley - Impact Assessment Criteria – July 2022

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO L_{Aeq} dB[2,3]	Exceedance[3,4]
Bulga RFS	20/07/2022 23:59	3.7	D	37	No	31	NA
Bulga Village	20/07/2022 23:34	3.3	D	38	No	IA	NA
Gouldsville	20/07/2022 21:25	2.4	D	35	Yes	IA	NA
Inlet Rd	20/07/2022 21:29	2.4	D	37	Yes	IA	NA
Inlet Rd West	20/07/2022 21:00	2.5	D	35	Yes	IA	NA
Long Point	20/07/2022 21:00	2.5	D	35	Yes	IA	NA
South Bulga	21/07/2022 0:45	3.2	D	36	No	IA	NA
Wambo Road	20/07/2022 21:57	2.5	D	38	Yes	IA	NA
Inlet Rd[5]	27/07/2022 21:24	2.5	D	37	Yes	IA	Nil
Inlet Rd West[5]	27/07/2022 21:00	3.0	D	35	Yes	IA	Nil
Wambo Road[5]	27/07/2022 21:48	2.7	D	38	Yes	IA	Nil

Notes:
1. Noise criteria apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LAeq,15minute attributed to MTO, including modifying factors if applicable;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.
5. Followup measurement.

Table 6: $L_{A1,\ 1Minute}$ Mount Thorley - Impact Assessment Criteria – July 2022

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO $L_{A1,\ 1min}$ dB[2,3]	Exceedance[3,4]
Bulga RFS	20/07/2022 23:59	3.7	D	47	No	35	NA
Bulga Village	20/07/2022 23:34	3.3	D	48	No	IA	NA
Gouldsville	20/07/2022 21:25	2.4	D	45	Yes	IA	NA
Inlet Rd	20/07/2022 21:29	2.4	D	47	Yes	IA	NA
Inlet Rd West	20/07/2022 21:00	2.5	D	45	Yes	IA	NA
Long Point	20/07/2022 21:00	2.5	D	45	Yes	IA	NA
South Bulga	21/07/2022 0:45	3.2	D	46	No	IA	NA
Wambo Road	20/07/2022 21:57	2.5	D	48	Yes	IA	NA
Inlet Rd[5]	27/07/2022 21:24	2.5	D	47	Yes	IA	Nil

Inlet Rd West[5]	27/07/2022 21:00	3.0	D	45	Yes	IA	Nil
Wambo Road[5]	27/07/2022 21:48	2.7	D	48	Yes	IA	Nil

Notes:
1. Noise criteria apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LA1,1minute attributed to MTO;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.
5. Followup measurement.

5.1.3 NPfI Low Frequency Assessment

In accordance with the requirements of the EPA's Noise Policy for Industry (NPfI), the applicability of the low frequency modification factor corrections has been assessed. This resulted in the application of a 2dB penalty to the site only LAeq for the measurements taken at Inlet Road and Inlet Road West and a 5dB penalty for the measurements taken at Wambo Road on 20 July 2022. Resulting LAeq noise levels exceed the WML impact assessment criteria at Inlet Road and Inlet Road West by 2dB and at Wambo Road by 7dB.

As described in **Section 8**, the Inlet Road, Inlet Road West and Wambo Road results and MTW's response was reported to the Department of Planning and Environment.

The WML assessment for low frequency noise is shown in **Table 7** and the MTO assessment for low frequency noise is shown in **Table 8**.

Table 7: Warkworth Low Frequency Noise Assessment – July 2022

Location	Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality [1]	Low-frequency Modifying Factor?	Maximum Exceedance of Reference Spectrum [1,2]	Penalty dB [2]	Exceedance
Bulga RFS	20/07/2022 23:59	NM	No	NA	NA	NA	NA	NA	Nil	NA
Bulga Village	20/07/2022 23:34	33	No	NA	NA	NA	NA	NA	Nil	NA
Gouldsville	20/07/2022 21:25	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd	20/07/2022 21:29	37	Yes	No	No	NA	Yes	**2 dB @ 80 Hz**	+2	**2**
Inlet Rd West	20/07/2022 21:00	35	Yes	No	No	NA	Yes	**2 dB @ 80 Hz**	+2	**2**
Long Point	20/07/2022 21:00	IA	Yes	No	No	NA	No	NA	Nil	Nil
South Bulga	21/07/2022 0:45	30	No	NA	NA	NA	NA	NA	Nil	NA
Wambo Road	20/07/2022 21:57	40	Yes	No	No	NA	Yes	**6 dB @ 80 Hz**	+5	**7**
Inlet Rd[5]	27/07/2022 21:24	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd West[5]	27/07/2022 21:00	IA	Yes	No	No	NA	No	NA	Nil	Nil
Wambo Road[5]	27/07/2022 21:48	IA	Yes	No	No	NA	No	NA	Nil	Nil

Notes:
1. NA denotes 'not applicable'; and
2. Bold results indicate that application of NPfI modifying factor/s is required.
3. Followup measurement.

Table 8: Mount Thorley Operations Low Frequency Noise Assessment – July 2022

Location	Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality[1]	Low-frequency Modifying Factor?	Maximum Exceedance of Reference Spectrum [1,2]	Penalty dB[2]	Exceedance [2]
Bulga RFS	20/07/2022 23:59	31	No	NA	NA	NA	NA	NA	Nil	NA
Bulga Village	20/07/2022 23:34	IA	No	NA	NA	NA	NA	NA	Nil	NA
Gouldsville	20/07/2022 21:25	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd	20/07/2022 21:29	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd West	20/07/2022 21:00	IA	Yes	No	No	NA	No	NA	Nil	Nil
Long Point	20/07/2022 21:00	IA	Yes	No	No	NA	No	NA	Nil	Nil
South Bulga	21/07/2022 0:45	IA	No	NA	NA	NA	NA	NA	Nil	NA
Wambo Road	20/07/2022 21:57	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd[5]	27/07/2022 21:24	IA	Yes	No	No	NA	No	NA	Nil	Nil
Inlet Rd West[5]	27/07/2022 21:00	IA	Yes	No	No	NA	No	NA	Nil	Nil
Wambo Road[5]	27/07/2022 21:48	IA	Yes	No	No	NA	No	NA	Nil	Nil

Notes:
1. NA denotes 'not applicable'; and
2. Bold results indicate that application of NPfI modifying factor/s is required.
3. Followup measurement.

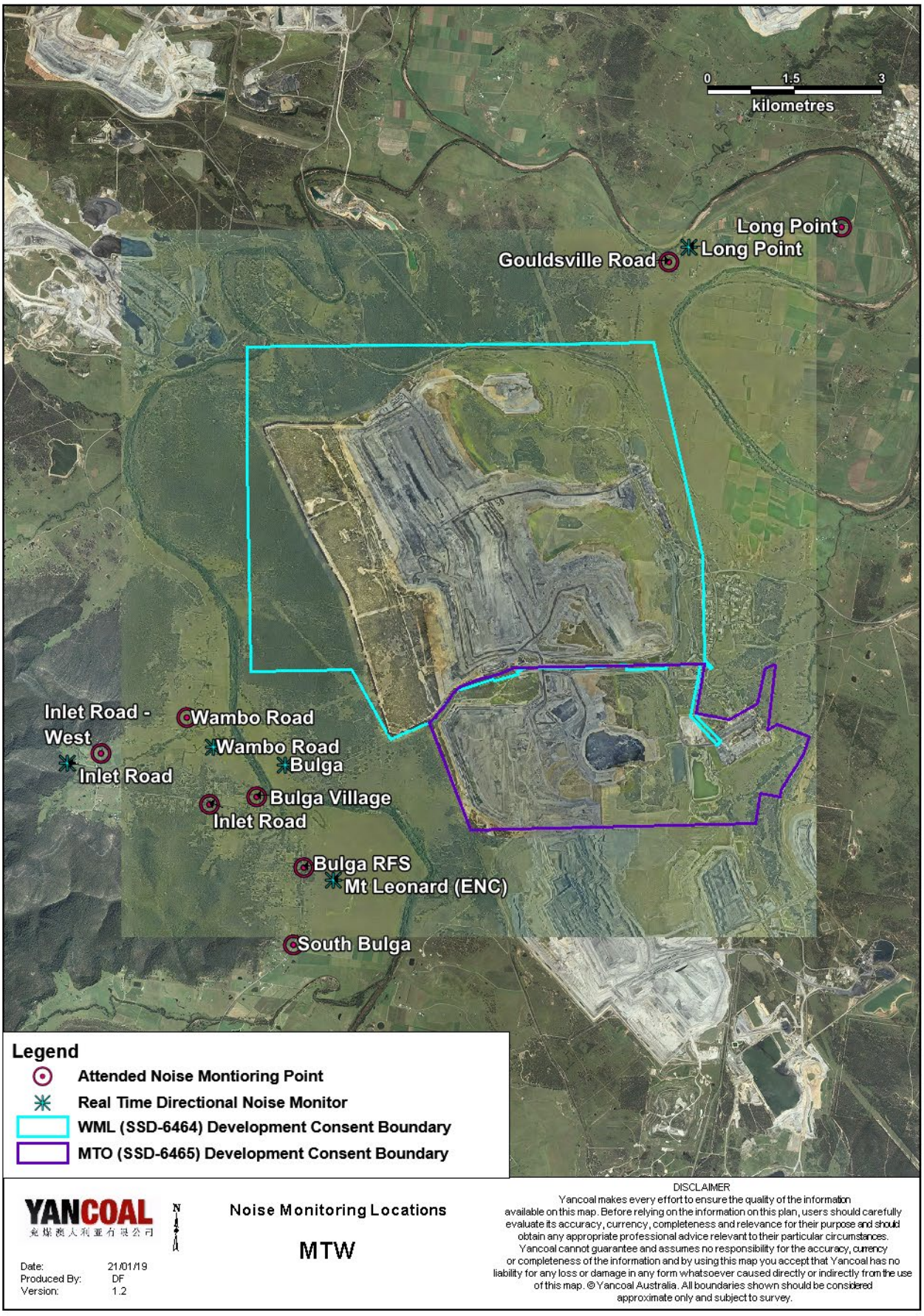


Figure 16: Noise Monitoring Location Plan

5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option);
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.

A summary of these assessments undertaken during July are provided in **Table 9**.

Table 9: Supplementary Attended Noise Monitoring Data – July 2022

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
668	22	8	3.29

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

6.0 OPERATIONAL DOWNTIME

During July, a total of 1639 hours of equipment downtime was logged in response to environmental events such as dust, noise and adverse meteorological conditions. Operational downtime by equipment type is shown in **Figure 17**.

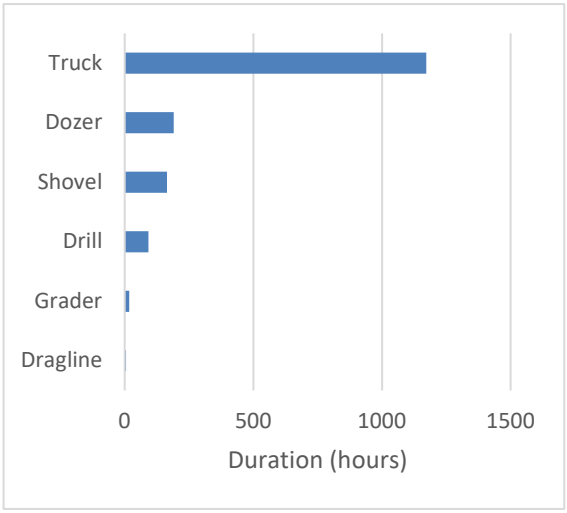


Figure 17: Operational Downtime by Equipment Type – July 2022

7.0 REHABILITATION

During July 2022, 0.89 Ha of land was released and 5.04 Ha was bulk shaped.

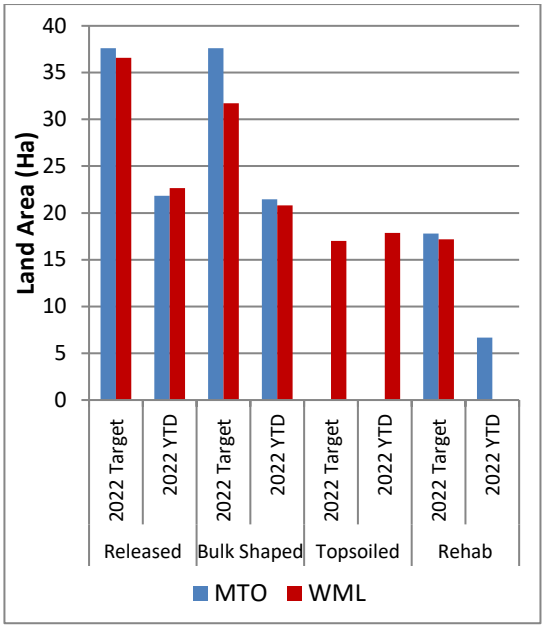


Figure 18: Rehabilitation YTD – July 2022

8.0 ENVIRONMENTAL INCIDENTS

There were four environmental incidents recorded during the reporting period.

On 4 and 5 July 2022, surface water overtopped the WML CC5 Coal Conveyor sump, due to a significant rainfall event. Rainfall started at approximately 11:20pm on Friday 1 July 2022 and continued until approximately 7:30am on Thursday 7 July 2022. A total of 175.6mm of rainfall was recorded during the period. Notifications to the relevant regulatory authorities was undertaken by the MTW Environment and Community Manager (Acting) in accordance with the sites Pollution Incident Response Management Plan.

From 3 to 7 July 2022, three sediment dams overtopped their spillways, due to a significant rainfall event. Notifications to the relevant regulatory authorities was undertaken by the MTW Environment and Community Manager (Acting) in accordance with the sites Pollution Incident Response Management Plan.

On 5 July 2022, one mine water dam overtopped its spillway due to a significant rainfall event. Overtopping was observed to have ceased on 6 July 2022. Notifications to the relevant regulatory authorities was undertaken by the MTW Environment and Community Manager (Acting) in accordance with the sites Pollution Incident Response Management Plan.

An exceedance of the WML Impact Assessment criteria was recorded at the Inlet Road West, Inlet Road and Wambo Road monitoring locations on 20 July 2022 starting at 21:00, 21:29 and 21:57 respectively. A mining continuum from WML was audible throughout the measurements, generating a site only LAeq of 35dB, 37dB and 40dB respectively. A low-frequency modifying factor of +2dB was applicable to the Inlet Road West and Inlet Road measurements and of +5dB was applicable to the Wambo Road measurement, in accordance with the NPfI, resulting in an adjusted site-only LAeq of 37 dB, 39dB and 40 dB, which exceeded the relevant criterion by 2dB, 2dB and 7 dB respectively. The MTW Community Response Officer (CRO) was undertaking routine supplementary noise assessments on the night of 20 July 2022 and enacted operational changes to bring levels below relevant criterion in accordance with the MTW Noise Management Plan. During follow up measurements at the Inlet Road West, Inlet Road and Wambo Road monitoring locations on 27 July 2022 starting at 21:00, 21:24 and 21:48 respectively, site only LAeq's were recorded as inaudible, thereby complying with the relevant criteria. The Department of Planning and Environment was notified in writing of the exceedance measurement on 21 July 2022. A written report was also provided to DPE on 28 July 2022.

9.0 COMPLAINTS

13 complaints were received during the reporting period. Details of these complaints are shown in **Table 10** below.

Table 10: Complaints Summary YTD

	Noise	Dust	Blast	Lighting	Other	Total
January	2	1	4	0	0	7
February	8	0	5	0	1	14
March	8	0	3	0	0	11
April	1	0	7	6	0	14
May	4	0	6	1	0	11
June	0	1	4	1	0	6
July	7	0	5	0	1	13
August						
September						
October						
November						
December						
Total	30	2	34	9	2	76

Appendix A: Meteorological Data

Table 11: Meteorological Data – Charlton Ridge Meteorological Station – July 2022

Date	Air Temperature		Relative Humidity		Wind Direction	Wind Speed	Rainfall
	Maximum (°C)	Minimum (°C)	Maximum (%)	Minimum (%)	Average (°)	Average (m/sec)	total (mm)
1/07/2022	13	4	100	73	182	3.3	0.6
2/07/2022	13	5	100	91	202	1.8	3.6
3/07/2022	14	6	100	95	280	2.2	76.0
4/07/2022	13	4	100	96	282	3.5	23.2
5/07/2022	15	7	100	98	159	4.1	48.8
6/07/2022	14	6	100	94	176	4.8	18.8
7/07/2022	18	6	100	54	218	2.6	4.6
8/07/2022	15	0	93	53	297	4.0	0.0
9/07/2022	16	-1	100	47	272	2.9	0.0
10/07/2022	12	-1	100	82	256	2.7	12.2
11/07/2022	17	3	100	58	193	2.2	0.2
12/07/2022	15	0	100	62	246	1.7	8.6
13/07/2022	14	1	100	52	279	2.2	0.8
14/07/2022	16	2	97	57	198	3.6	0.0
15/07/2022	16	-2	100	45	244	2.0	0.0
16/07/2022	17	-4	100	41	264	2.8	0.0
17/07/2022	20	3	72	38	241	4.3	0.0
18/07/2022	17	3	72	33	256	3.0	0.0
19/07/2022	14	0	100	56	177	3.2	1.0
20/07/2022	17	2	100	49	167	3.1	0.4
21/07/2022	18	3	100	40	142	4.0	0.4
22/07/2022	17	6	97	53	154	3.5	0.2
23/07/2022	18	4	100	58	177	3.2	0.0
24/07/2022	17	3	100	64	191	2.0	0.2
25/07/2022	16	1	100	62	188	1.5	0.2
26/07/2022	19	3	100	41	258	3.2	3.6
27/07/2022	17	0	84	35	287	3.2	0.0
28/07/2022	18	0	97	44	285	2.8	0.0
29/07/2022	17	1	93	32	230	2.6	0.0
30/07/2022	16	-2	99	41	180	1.6	0.0
31/07/2022	17	-3	100	42	194	1.4	0.0