Monthly Environmental Monitoring Report

Yancoal Mount Thorley Warkworth

October 2025

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Revision History

Version No.	Version Details	Date
1.0	**Final**	**26/02/2026**

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 October to 31 October 2025.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

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

2.1.1 Rainfall

Rainfall for the reporting period is summarised in **Table 1**. The year-to-date monthly rainfall totals, 2025 monthly rainfall totals and historical average monthly rainfall trend are shown in **Figure 1**.

Table 1: Monthly Rainfall MTW

2025	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
October	32.6	623.2

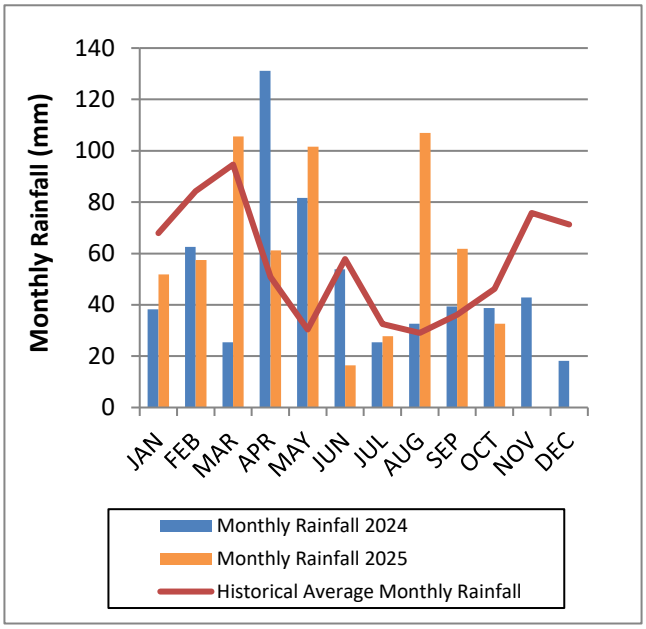


Figure 1: Rainfall Trend YTD

Note: The historical average monthly rainfall is calculated from 2007 to 2024 monthly totals.

2.1.2 Wind Speed and Direction

Winds from the Northwest were dominant during the reporting period as shown in **Figure 2.**

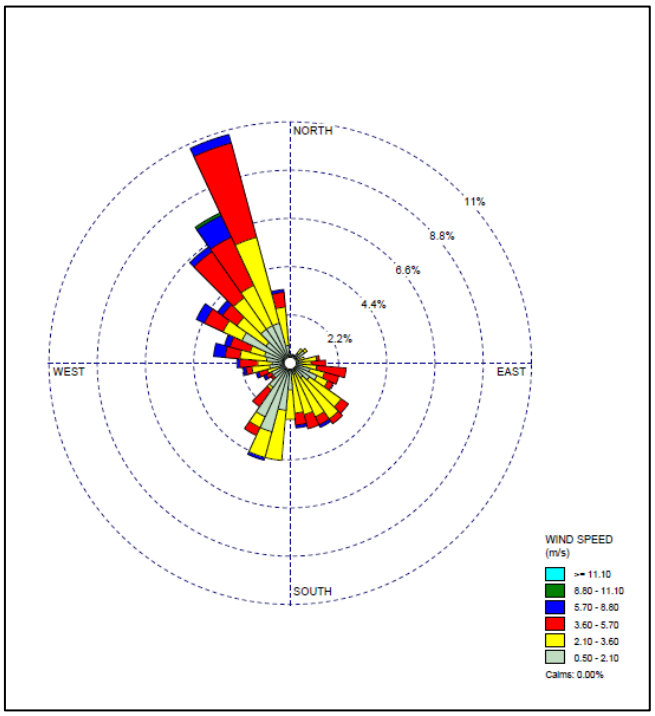


Figure 2: Charlton Ridge Wind Rose – October 2025

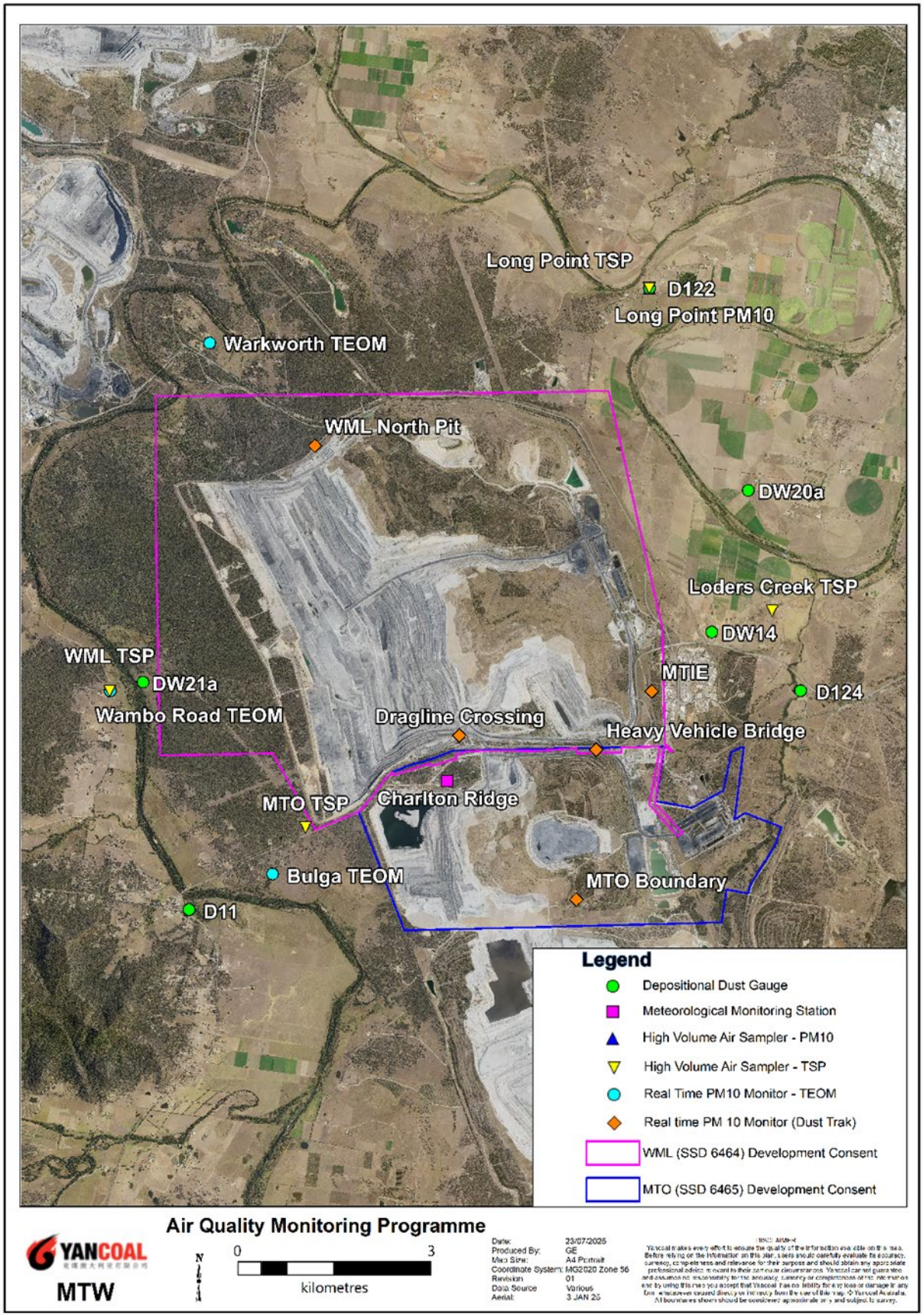


Figure 3: Air Quality Monitoring Locations

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.

On 3 November 2025, an updated Air Quality Management Plan was approved by Department of Planning, Housing and Infrastructure. The update included a change to the monitoring program which removed depositional dust monitoring for the Warkworth monitoring location (as there are no residences on privately owned land in Warkworth) and a TEOM PM10 monitor is monitored at this location. Accordingly, the Warkworth monitoring location will no longer be reported in the deposited dust monitoring results.

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 2025 Annual Review Report.

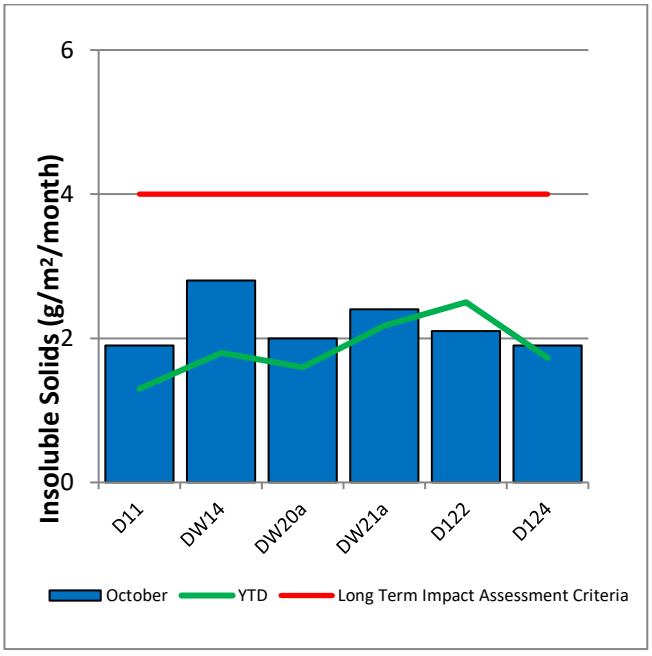


Figure 4: Depositional Dust – October 2025

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.

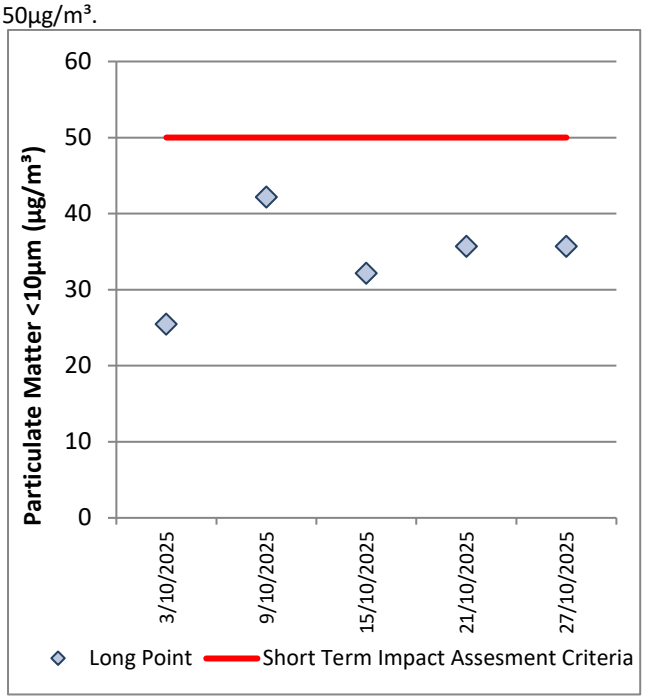


Figure 5: Individual PM10 Results – October 2025

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 2025 Annual Review Report.

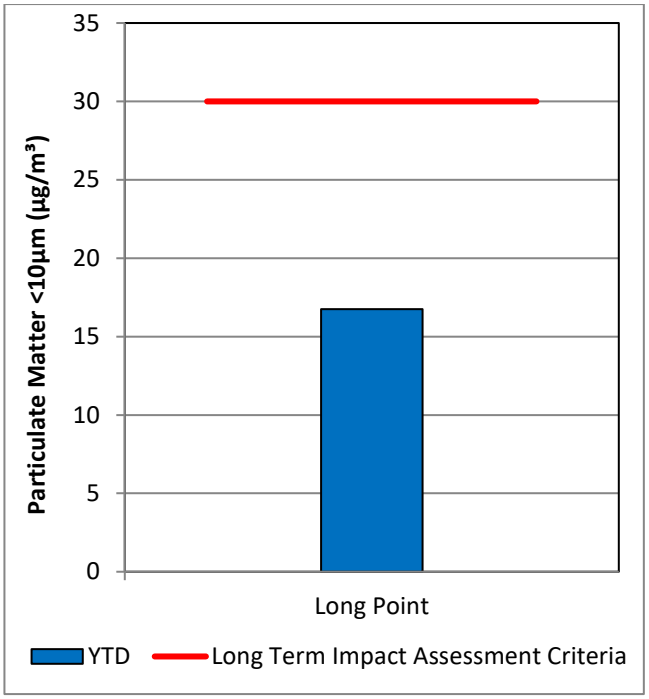


Figure 6: Annual Average PM_{10} – October 2025

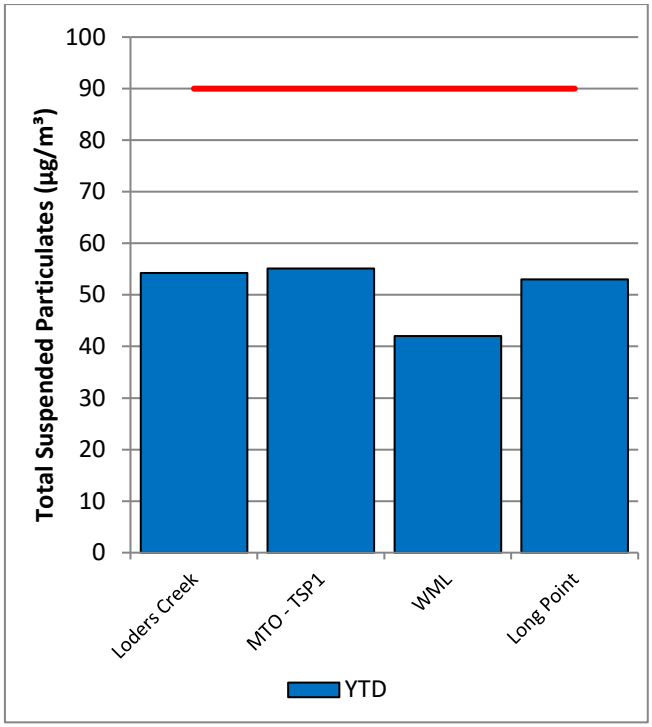


Figure 7: Annual Average Total Suspended Particulates – October 2025

2.3.2 TSP Results

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

On 3 November 2025, an updated Air Quality Management Plan was approved by Department of Planning, Housing and Infrastructure. The update included a change to the monitoring program which removed TSP monitoring for the Warkworth monitoring location (as there are no residences on privately owned land in Warkworth) and a TEOM PM10 monitor is monitored at this location. Accordingly, the Warkworth monitoring location will no longer be reported in the TSP monitoring results.

An assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 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.

On 1 October 2025, the Warkworth TEOM (55.6 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 0.2 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 6 October 2025, the Warkworth TEOM (62.4 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 6.2

ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 8 October 2025, the Warkworth TEOM (81.7 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 2.6 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 9 October 2025, the Warkworth TEOM (51.3 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 9.0 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 16 October 2025, the Warkworth TEOM (53.0 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 5.6 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 17 October 2025, the Warkworth TEOM (57.4 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 1.3 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 21 October 2025, the Warkworth TEOM (39.9 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 38.7 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 22 October 2025, the Warkworth TEOM (56.9 ug/m3) exceeded the short term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM_{10} levels on the day resulting in a maximum estimated contribution of 2.9 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

2.3.4 Real Time Alarms for Air Quality

During October, the real time monitoring system generated 251 automated air quality related alerts, including 28 alerts for adverse meteorological conditions and 223 alerts for elevated PM_{10} levels.

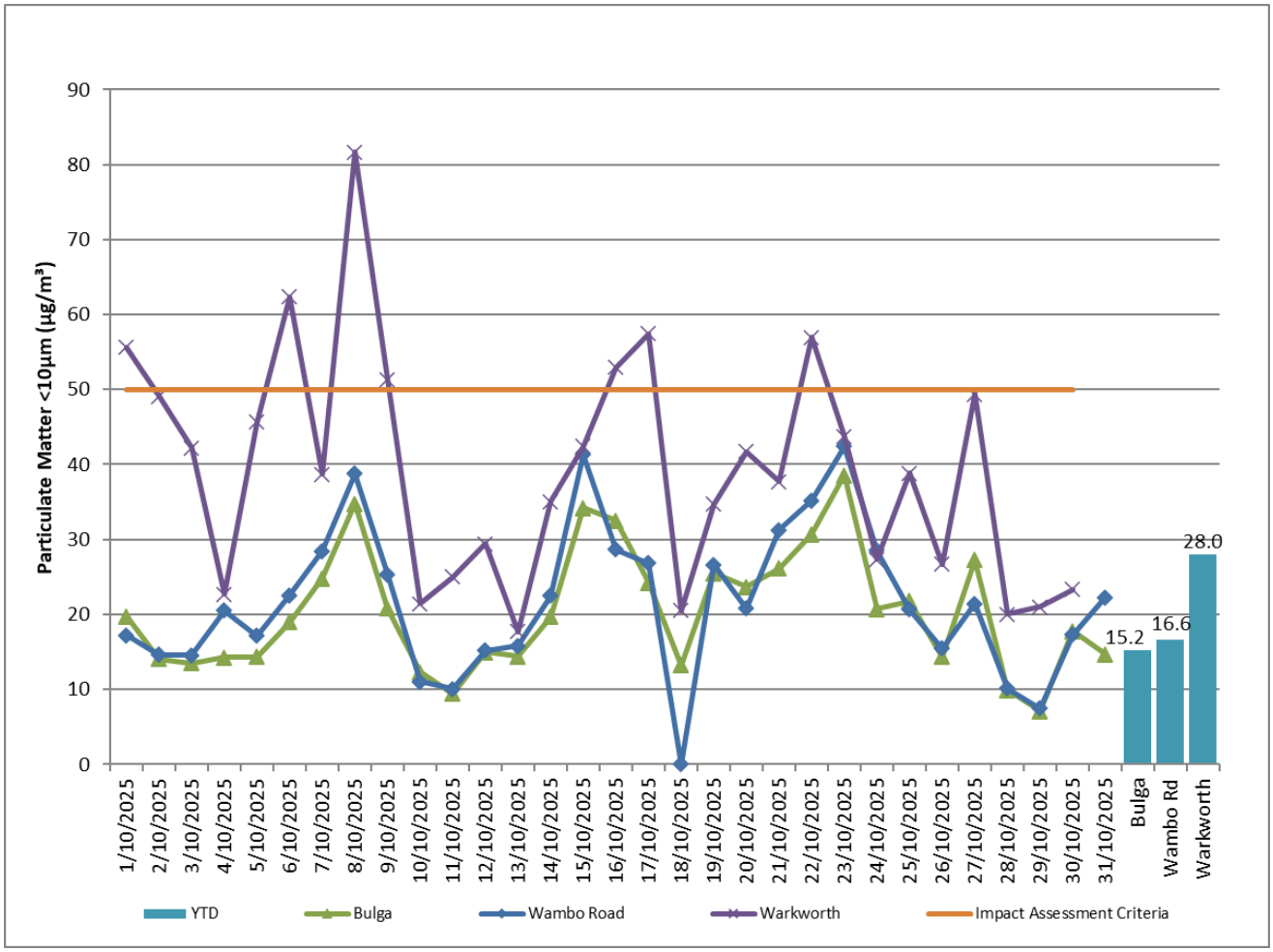


Figure 8: Real Time PM_{10} daily 24hr average (line graphs) and YTD annual average (column graphs) – October 2025

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 December 2025 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.

MTW did not undertake HRSTS discharges in October.

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 December 2025 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 October 2025, 31 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. No blasts exceed the 5mm/s criteria for ground vibration

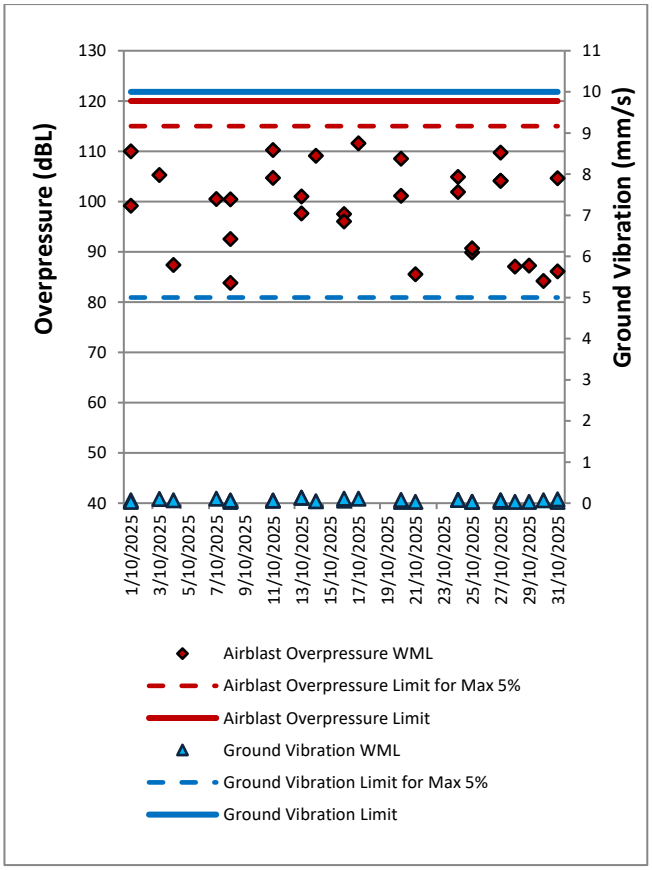


Figure 9: Abbey Green Blast Monitoring Results – October 2025

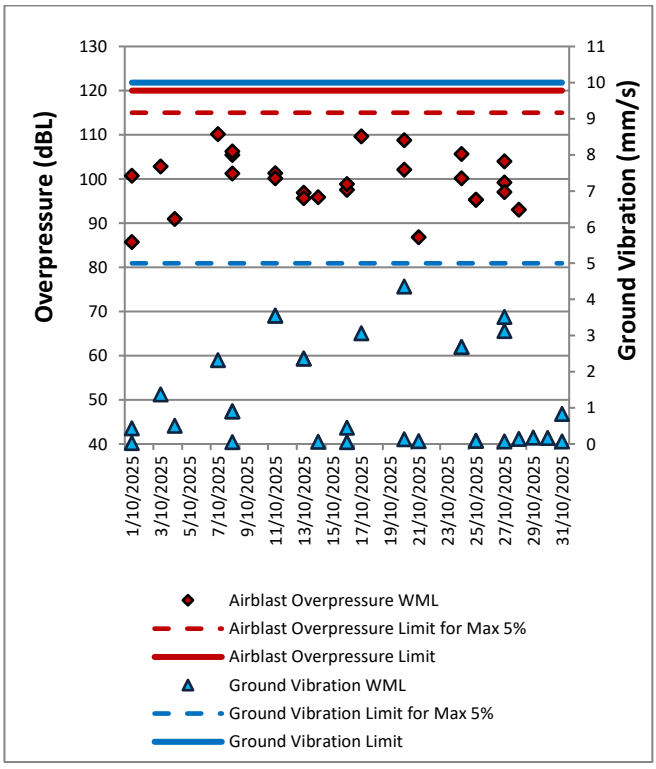


Figure 10: Bulga Village Blast Monitoring Results – October 2025

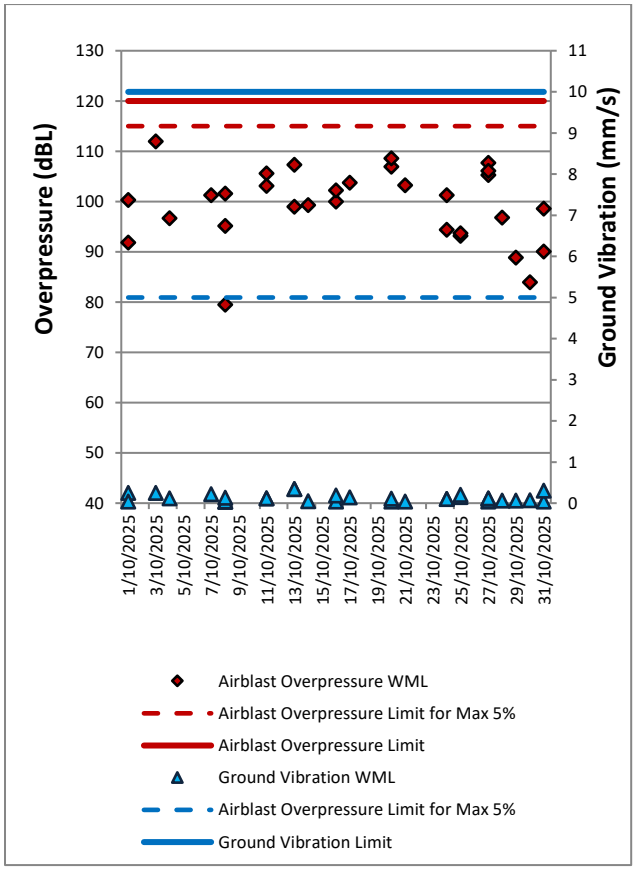


Figure 11: Putty Road MTIE Blast Monitoring Results – October 2025

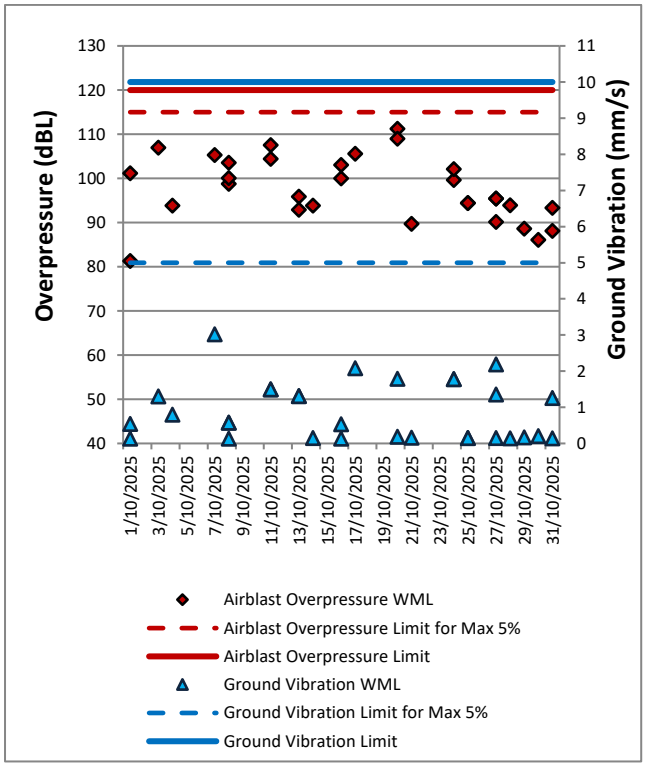


Figure 12: Wollemi Peak Road Blast Monitoring Results – October 2025

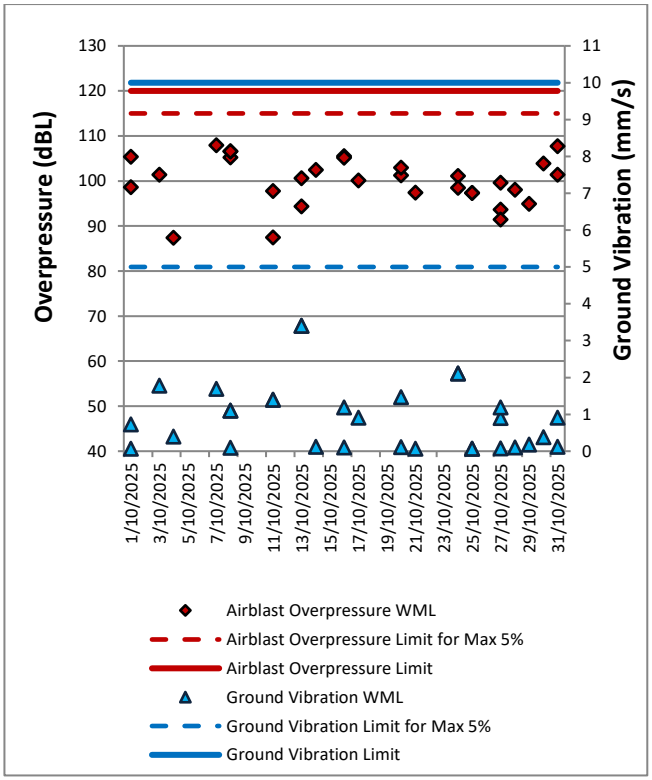


Figure 13: Wambo Road Blast Monitoring Results – October 2025

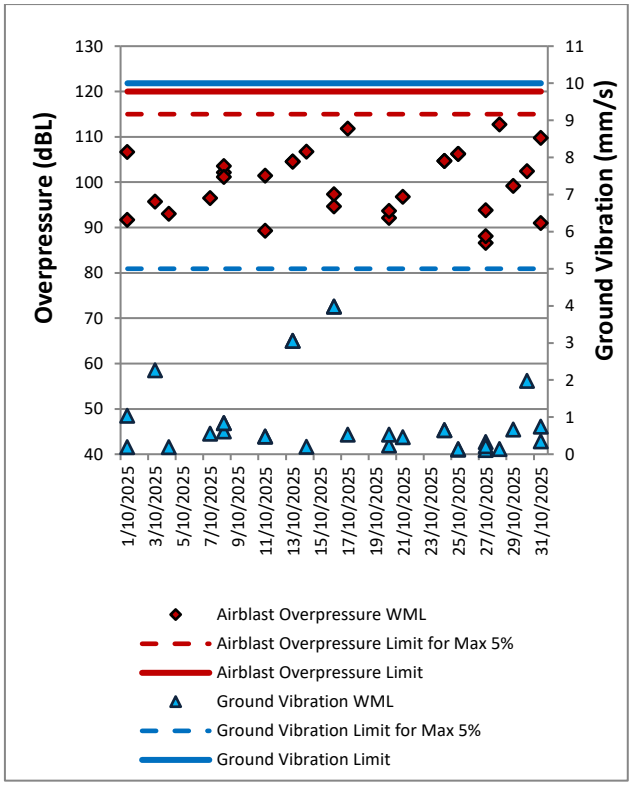


Figure 14: Warkworth Blast Monitoring Results – October 2025

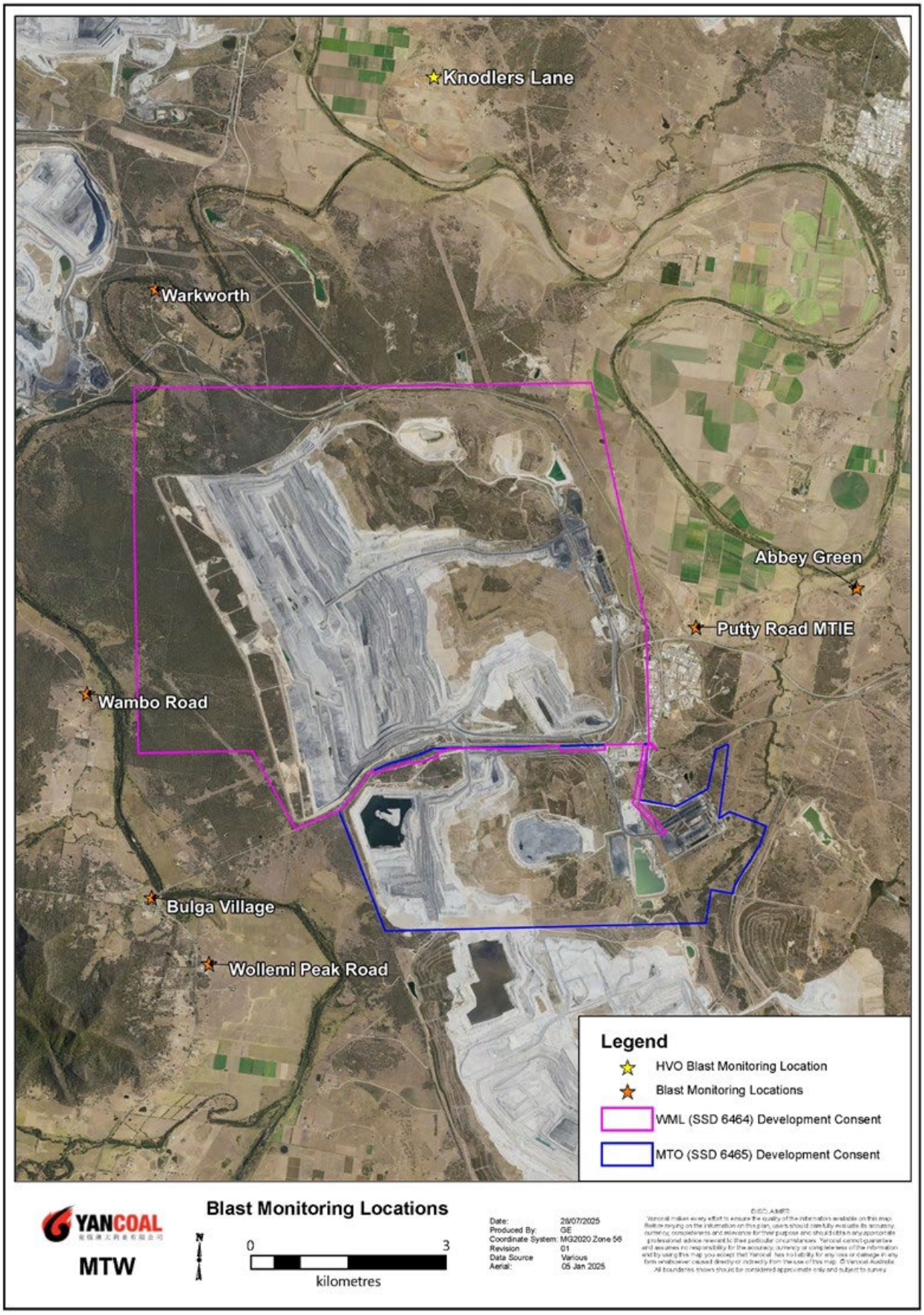


Figure 15: MTW Blast Monitoring Location Plan

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 nights of 20 October 2025. Measurements complied with the relevant criteria.

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 – October 2025

Location	Start Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML $L_{Aeq,15minute}$ dB[2]	Exceedances[3]
Bulga RFS	20/10/2025 22:48	1.4	F	37	Yes	26	Nil
Bulga Village	20/10/2025 22:08	2	E	38	Yes	<25	Nil
Gouldsville	20/10/2025 21:20	1.2	F	38	Yes	IA	Nil
Inlet Road	20/10/2025 21:21	1.2	F	37	Yes	26	Nil
Inlet Road West	20/10/2025 21:00	1.7	E	35	Yes	<25	Nil
Long Point	20/10/2025 21:00	1.7	E	35	Yes	<20	Nil
South Bulga	20/10/2025 23:12	1	F	35	Yes	<20	Nil
Wambo Road	20/10/2025 21:46	1.5	E	38	Yes	28	Nil

Notes:
1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only $L_{Aeq,15minute}$, includes modifying factors if applicable.
3. Bold results in red indicate exceedance of relevant criterion.

Table 4: $L_{A1,\ 1\ minute}$ Warkworth - Impact Assessment Criteria – October 2025

Location	Start Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML $L_{A1,\ 1min}$ dB[2]	Exceedances[3]
Bulga RFS	20/10/2025 22:48	1.4	F	47	Yes	32	Nil
Bulga Village	20/10/2025 22:08	2	E	48	Yes	28	Nil
Gouldsville	20/10/2025 21:20	1.2	F	48	Yes	IA	Nil
Inlet Road	20/10/2025 21:21	1.2	F	47	Yes	29	Nil
Inlet Road West	20/10/2025 21:00	1.7	E	45	Yes	<25	Nil
Long Point	20/10/2025 21:00	1.7	E	45	Yes	<20	Nil
South Bulga	20/10/2025 23:12	1	F	45	Yes	27	Nil
Wambo Road	20/10/2025 21:46	1.5	E	48	Yes	34	Nil

Notes:
1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only LA1,1minute, based on Lamax as detailed in Section 3.2.
3. Bold results in red indicate exceedance of relevant criterion.

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 – October 2025

Location	Start Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO $L_{Aeq,15minute}$ dB[2]	Exceedances[3]
Bulga RFS	20/10/2025 22:48	1.4	F	37	Yes	31	Nil
Bulga Village	20/10/2025 22:08	2	E	38	Yes	IA	Nil
Gouldsville	20/10/2025 21:20	1.2	F	35	Yes	IA	Nil
Inlet Road	20/10/2025 21:21	1.2	F	37	Yes	<20	Nil
Inlet Road West	20/10/2025 21:00	1.7	E	35	Yes	IA	Nil
Long Point	20/10/2025 21:00	1.7	E	35	Yes	IA	Nil
South Bulga	20/10/2025 23:12	1	F	36	Yes	28	Nil
Wambo Road	20/10/2025 21:46	1.5	E	38	Yes	IA	Nil

Notes:
1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only $L_{Aeq,15minute}$, includes modifying factors if applicable.
3. Bold results in red indicate exceedance of relevant criterion.

Table 6: $L_{A1,\ 1Minute}$ Mount Thorley - Impact Assessment Criteria – October 2025

Location	Start Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO $L_{A1,\ 1min}$ dB[2]	Exceedances[3]
Bulga RFS	20/10/2025 22:48	1.4	F	47	Yes	40	Nil
Bulga Village	20/10/2025 22:08	2	E	48	Yes	IA	Nil
Gouldsville	20/10/2025 21:20	1.2	F	45	Yes	IA	Nil
Inlet Road	20/10/2025 21:21	1.2	F	47	Yes	<20	Nil
Inlet Road West	20/10/2025 21:00	1.7	E	45	Yes	IA	Nil
Long Point	20/10/2025 21:00	1.7	E	45	Yes	IA	Nil
South Bulga	20/10/2025 23:12	1	F	46	Yes	37	Nil
Wambo Road	20/10/2025 21:46	1.5	E	48	Yes	IA	Nil

Notes:
1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only LA1,1minute, based on Lamax as detailed in Section 3.2.
3. Bold results in red indicate exceedance of relevant criterion.

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. There were no noise measurements taken during the reporting period which required the penalty to be applied.

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 – October 2025

Location	Start Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor? [1]	Tonality Modifying Factor? [1]	Frequency of Tonality [1]	Low-frequency Modifying Factor?[1]	Exceedance of Reference Spectrum [1,2]	Total Penalty dB [2]
Bulga RFS	20/10/2025 22:48	26	Yes	No	No	N/A	No	N/A	Nil
Bulga Village	20/10/2025 22:08	<25	Yes	No	No	N/A	No	N/A	Nil
Gouldsville	20/10/2025 21:20	IA	Yes	No	No	N/A	No	N/A	Nil
Inlet Road	20/10/2025 21:21	26	Yes	No	No	N/A	No	N/A	Nil
Inlet Road West	20/10/2025 21:00	<25	Yes	No	No	N/A	No	N/A	Nil
Long Point	20/10/2025 21:00	<20	Yes	No	No	N/A	No	N/A	Nil
South Bulga	20/10/2025 23:12	<20	Yes	No	No	N/A	No	N/A	Nil
Wambo Road	20/10/2025 21:46	28	Yes	No	No	N/A	Yes	N/A	Nil

Notes:
1. Yes/No denote modifying factor was or was not applied. N/A denotes assessment was 'not applicable' due to meteorological conditions or further assessment was not required.
2. Bold results indicate that application of NPfI modifying factor/s is required.

Table 8: Mount Thorley Operations Low Frequency Noise Assessment – October 2025

Location	Start Date and Time	Measured MTO LAeq dB	Criterion Applies?	Intermittency Modifying Factor? [1]	Tonality Modifying Factor? [1]	Frequency of Tonality[1]	Low-frequency Modifying Factor? [1]	Exceedance of Reference Spectrum [1,2]	Total Penalty dB[2]
Bulga RFS	20/10/2025 22:48	31	Yes	No	No	N/A	No	N/A	Nil
Bulga Village	20/10/2025 22:08	IA	Yes	No	No	N/A	No	N/A	Nil
Gouldsville	20/10/2025 21:20	IA	Yes	No	No	N/A	No	N/A	Nil
Inlet Road	20/10/2025 21:21	<20	Yes	No	No	N/A	No	N/A	Nil
Inlet Road West	20/10/2025 21:00	IA	Yes	No	No	N/A	No	N/A	Nil
Long Point	20/10/2025 21:00	IA	Yes	No	No	N/A	No	N/A	Nil
South Bulga	20/10/2025 23:12	28	Yes	No	No	N/A	No	N/A	Nil
Wambo Road	20/10/2025 21:46	IA	Yes	No	No	N/A	No	N/A	Nil

Notes:
1. Yes/No denote modifying factor was or was not applied. N/A denotes assessment was 'not applicable' due to meteorological conditions or further assessment was not required.
2. Bold results indicate that application of NPfI modifying factor/s is required.

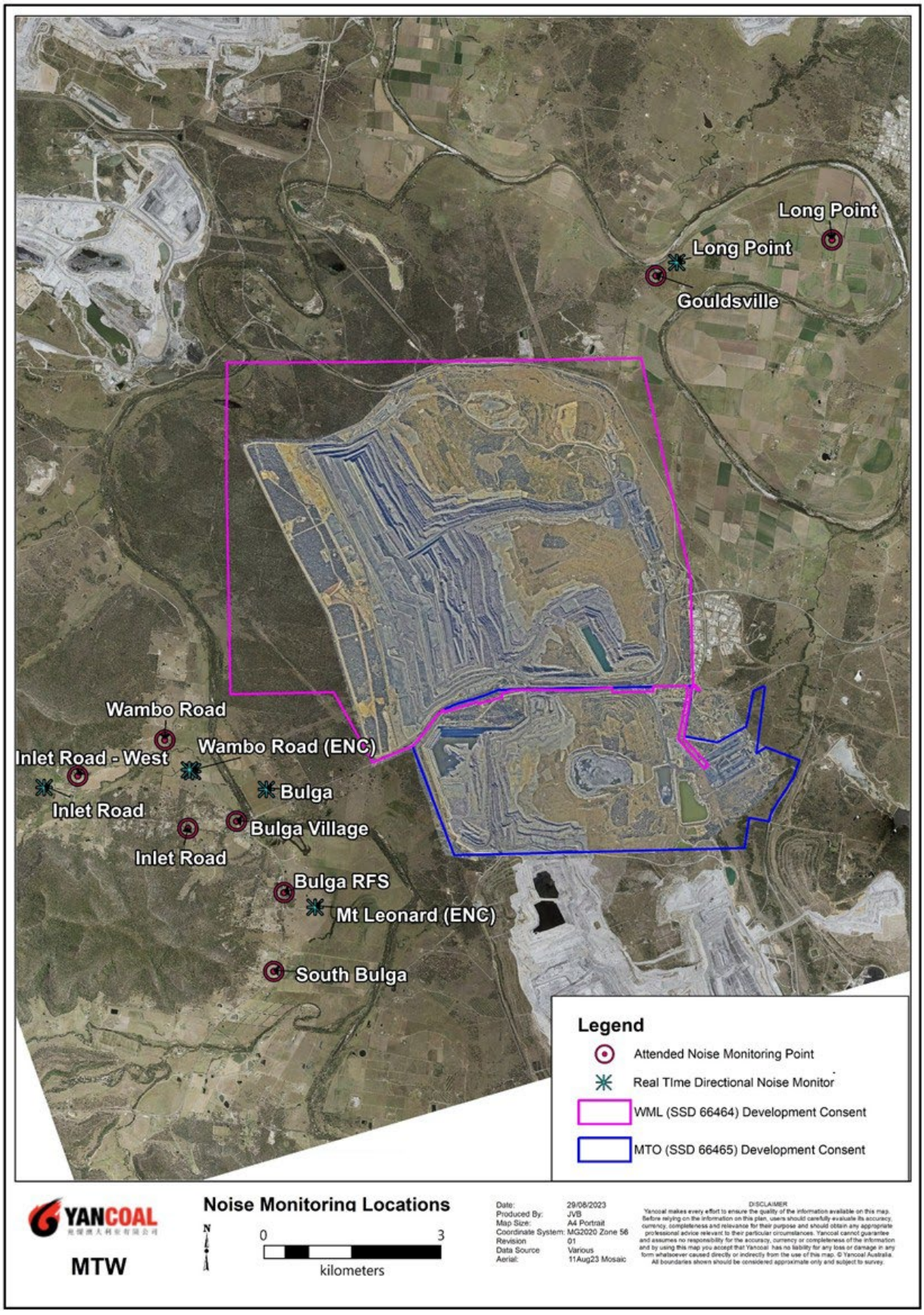


Figure 16: Noise Monitoring Location Plan

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 the reporting period are provided in **Table 9**.

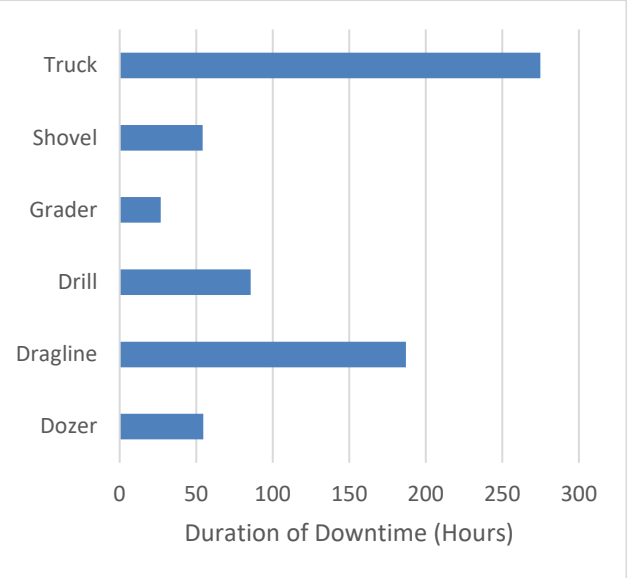
Table 9: Supplementary Attended Noise Monitoring Data – October 2025

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
731	8	6	1.1

6.0 OPERATIONAL DOWNTIME

During October, a total of 683.3 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 – October 2025



7.0 REHABILITATION

During October 2025, 5.3 Ha of land was released, 14.5 Ha was bulk shaped, 7.2 Ha was topsoiled, 4.0 Ha was composted and no land was rehabilitated (seeded).

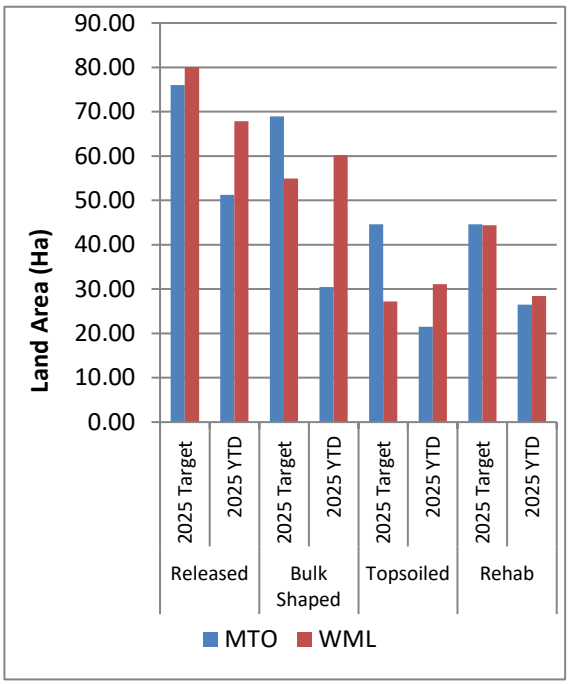


Figure 18: Rehabilitation YTD – October 2025

8.0 ENVIRONMENTAL INCIDENTS

There were no environmental incidents recorded during the reporting period.

9.0 COMPLAINTS

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

Table 10: Complaints Summary YTD

	Noise	Dust	Blast	Lighting	Other	Total
January	0	3	3	2	0	8
February	2	0	3	2	1	8
March	8	2	5	1	0	16
April	6	4	7	0	0	17
May	4	0	3	0	0	7
June	2	11	1	0	0	14
July	3	3	2	3	2	13
August	4	1	4	0	0	9
September	4	2	4	4	0	14
October	4	6	5	4	0	19
November						
December						
Total	37	32	37	16	3	125

Appendix A: Meteorological Data

Table 11: Meteorological Data – Charlton Ridge Meteorological Station – October 2025

Date	Air Temperature		Relative Humidity		Wind Direction	Wind Speed	Rainfall
	Maximum (°C)	Minimum (°C)	Maximum (%)	Minimum (%)	Average (°)	Average (m/sec)	total (mm)
1/10/2025	28	13	50	12	281	3.5	0
2/10/2025	26	7	78	17	277	3.9	0
3/10/2025	26	7	65	15	261	3.5	0
4/10/2025	25	8	97	29	170	1.7	0
5/10/2025	30	8	100	17	272	2.7	0
6/10/2025	33	14	83	11	255	3.6	0
7/10/2025	22	15	100	47	198	2.1	0.4
8/10/2025	35	14	80	17	257	2.6	0
9/10/2025	27	15	98	32	260	3.7	3.2
10/10/2025	29	12	100	20	253	2.6	0.2
11/10/2025	32	10	84	10	258	2.9	0
12/10/2025	32	9	91	16	265	3.3	0.4
13/10/2025	26	11	99	19	229	3.1	0.4
14/10/2025	28	10	95	22	221	2.4	0
15/10/2025	29	8	81	16	169	1.7	0
16/10/2025	33	11	95	19	251	2.6	0.2
17/10/2025	33	15	100	34	269	3.8	8
18/10/2025	25	15	94	48	134	2.5	0
19/10/2025	28	11	94	31	146	1.9	0
20/10/2025	35	13	99	26	264	2.2	0
21/10/2025	29	16	90	40	143	3.0	0
22/10/2025	38	15	98	21	251	3.8	0
23/10/2025	27	14	79	26	165	2.9	0
24/10/2025	30	13	86	11	191	2.7	0
25/10/2025	20	12	96	53	230	1.6	0
26/10/2025	28	9	91	25	274	2.4	0
27/10/2025	29	11	84	20	205	3.6	0
28/10/2025	14	9	100	50	146	3.0	17
29/10/2025	20	10	100	64	151	2.4	2.8
30/10/2025	26	12	100	40	161	1.9	0
31/10/2025	28	12	100	37	144	2.5	0