

Mount Pleasant Operation Monthly Environmental Monitoring Report

March 2024

1. Introduction

The Mount Pleasant Operation (MPO) is located within Upper Hunter Valley of New South Wales, approximately three kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton. The villages of Aberdeen and Kayuga are located 12 km north-northeast and 3 km north of the operations, respectively.

The purpose of this report is to provide a monthly update of monitoring data in accordance with the requirements of NSW Environmental Protection Licence (EPL) 20850, Section 66(6) of the *Protection of the Environment Operations Act 1997 (POEO Act)*, the MPO Development Approval (DA 92/97) and the MPO Development Consent (SSD 10418).

Table 1-1 – Mount Pleasant Operation

Name of Operation	Mount Pleasant Operation
Name of Licensee	MACH Energy Australia Pty Ltd
Environmental Protection Licence	20850
Project Approval	DA 92/97
Reporting Period Start Date	1 March 2024
Reporting Period End Date	31 March 2024
Date All Data Received	6 May 2024

Links to three key regulatory documents are provided here:

- [MACH Energy Environment Protection Licence EPL 20850; and](#)
- [Mount Pleasant Operation Development Application Approval DA 92/97; and](#)
- [Mount Pleasant Operation Development Consent SSD 10418.](#)

2. Monitoring Requirements

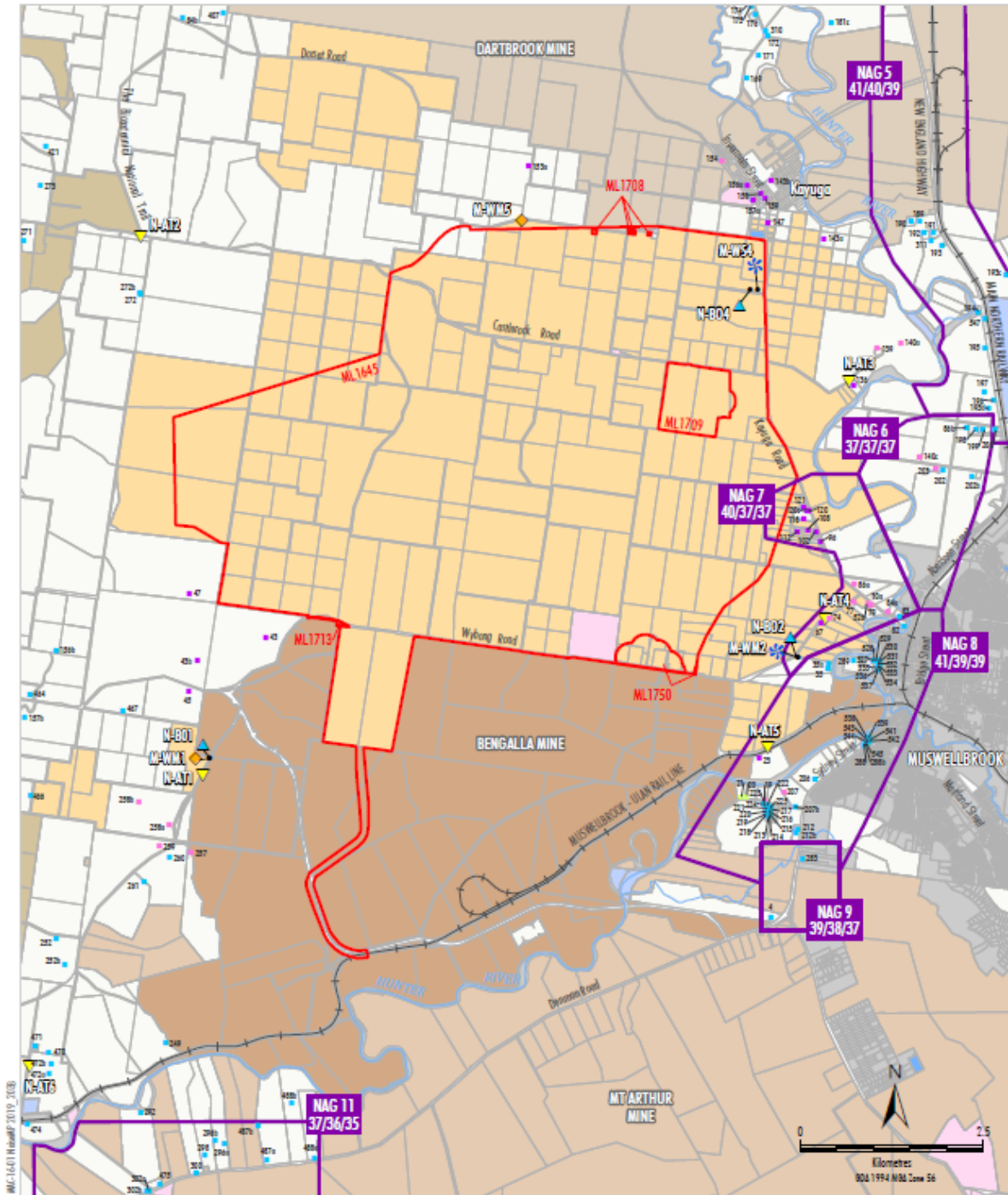
The MPO EPL 20850 specifically requires the monitoring of:

- 2 x Palas Fidas Air Quality Monitoring sites.
- Noise monitoring.
- Blast monitoring; and
- Meteorological monitoring.

Monitoring of sites not required by the EPL are conducted in accordance with *MPO Environmental Monitoring Program (EMP)*, Project Approval (DA 92/97) and Development Consent (SSD 10418).

All monitoring is undertaken by suitably qualified and experienced person(s). The MPO Environmental Monitoring Network is shown in the following figures:

- **Figure 2-1** shows MPO attended noise monitoring locations and Noise Assessment Groups (NAGs).
- **Figure 2-2** shows the MPO Air Quality Monitoring network.
- **Figure 2-3** shows the MPO Blast Monitoring Locations.
- **Figure 2-4** shows the MPO Groundwater Monitoring network; and
- **Figure 2-5** shows the MPO Surface Water Monitoring network.



LEGEND

- Mining Lease Boundary
- Muswellbrook and Upper Hunter LEPs Zones B2, B5, IN1, SP2, R2, R5, RE1, RE2 and W1
- Crown
- The State of NSW
- Muswellbrook Shire Council
- Mount Pleasant Controlled
- Bengalla Controlled
- Dartbrook Controlled
- Mt Arthur Controlled
- Other Mining/Resource Company Controlled
- Privately Owned Land

- Privately-owned Residence - MPO Acquisition on Request
- Privately-owned Residence - MPO Mitigation/Acquisition on Request *
- Privately-owned Residence - MPO Mitigation on Request
- Other Privately-owned Residence
- NAG 5 Noise Assessment Group (NAG) (DA 92/97)
- 37/37/37 Default NAG Noise Criteria for Day/Evening/Night

Monitoring Sites

- ▲ Attended Noise
- ▲ Real-Time Noise
- ◆ Weather Mast
- ✪ Weather Station

* MPO Mitigation on Request - rail noise. MPO is only required to acquire and/or install air quality mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla Mine.

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2019)

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MOUNT PLEASANT OPERATION

Nominal Noise and Meteorological Monitoring Sites

Figure 2-1 – MPO Attended Noise Monitoring Assessment Groups and Locations

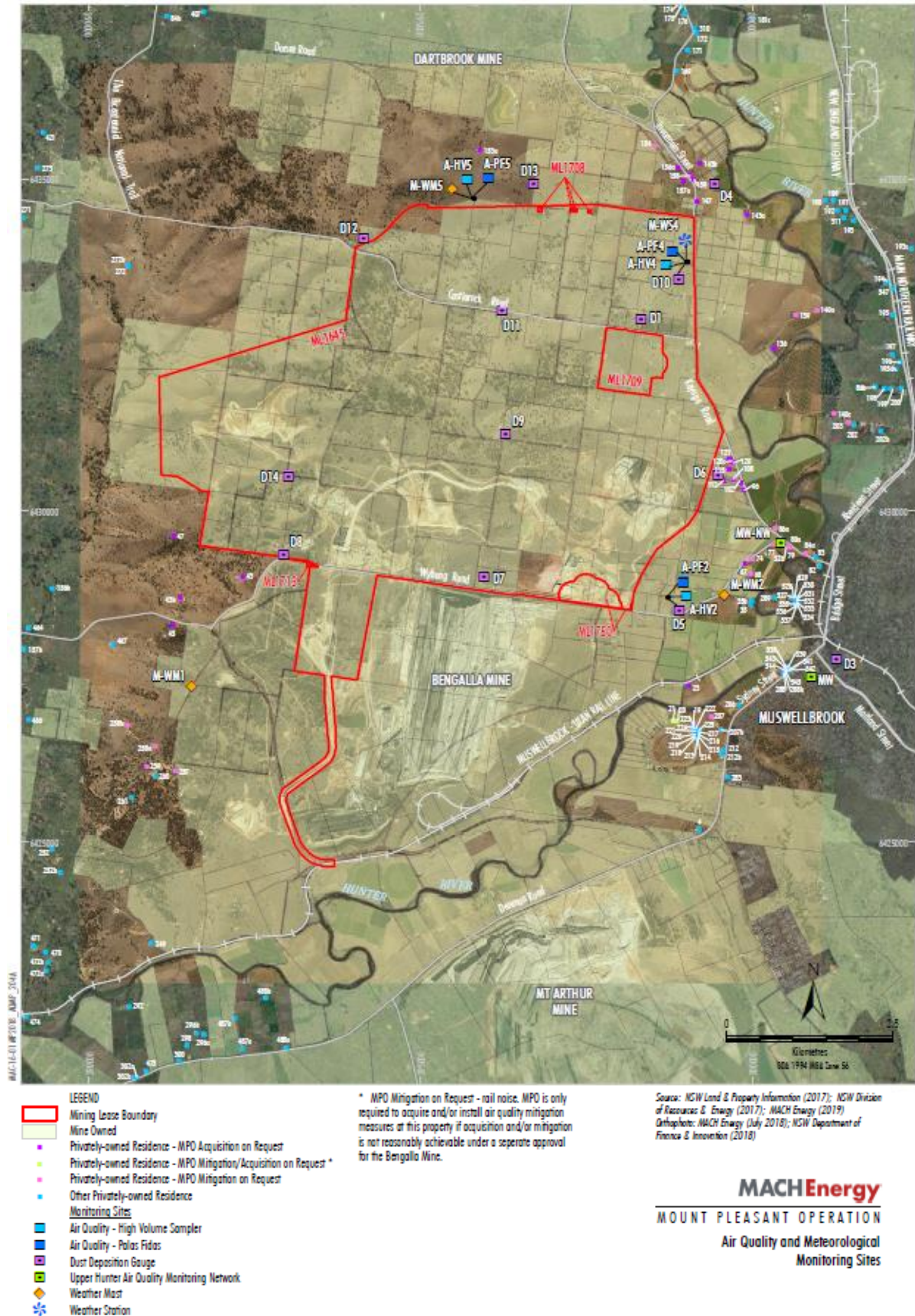
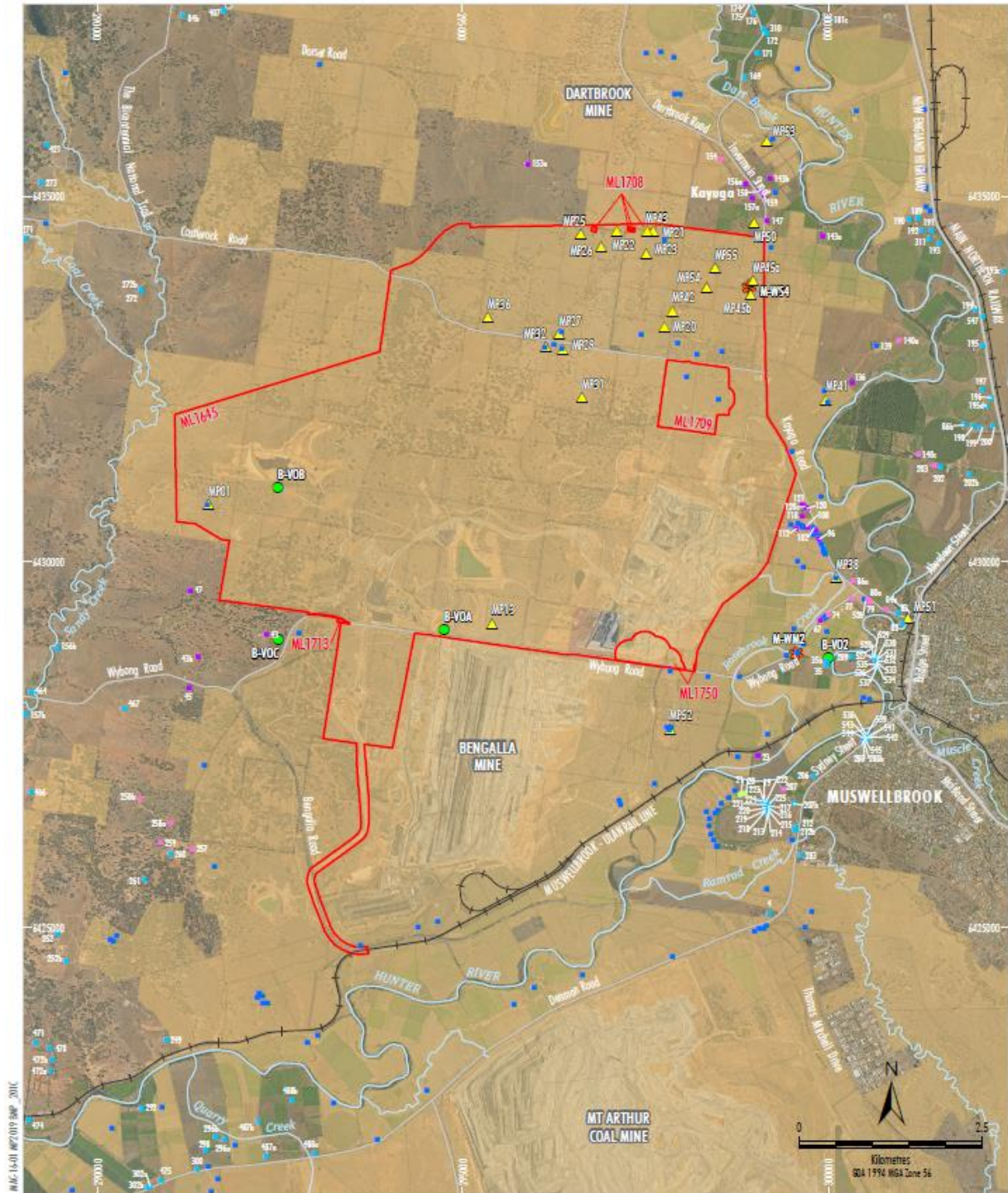


Figure 2-2 – MPO Air Quality and Meteorological Monitoring Network



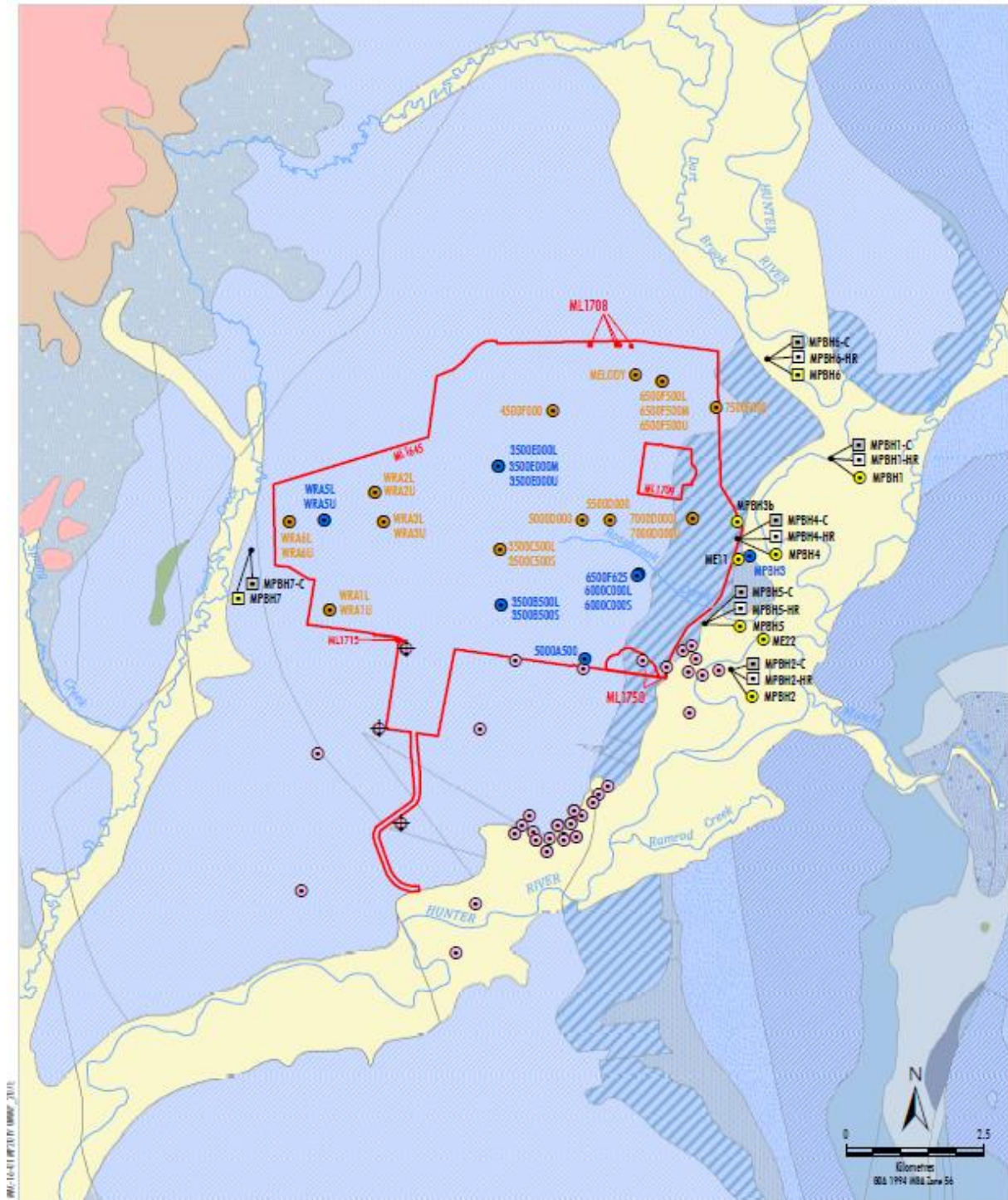
- LEGEND**
- Mining Lease Boundary
 - Mine-owned Land
 - Mine-owned Dwelling
 - Privately-owned Residence - MPO Acquisition on Request
 - Privately-owned Residence - MPO Mitigation/Acquisition on Request *
 - Privately-owned Residence - MPO Mitigation on Request
 - Other Privately-owned Residence
 - Blast Monitoring Site (Vibration/Overpressure)
 - ★ Weather Station
 - ▲ Historic Heritage Site Subject to Blast Criteria

* MPO Mitigation on Request - rail noise. MPO is only required to acquire and/or install air quality mitigation measures at this property if acquisition and/or mitigation is not reasonably achievable under a separate approval for the Bengalla Mine.

Source: MACH Energy (2020); NSW Spatial Services (2019)
Orthophoto: MACH Energy (Jan 2020)

MACH Energy
MOUNT PLEASANT OPERATION
Blast Monitoring Locations

Figure 2-3 – MPO Blast Monitoring Locations



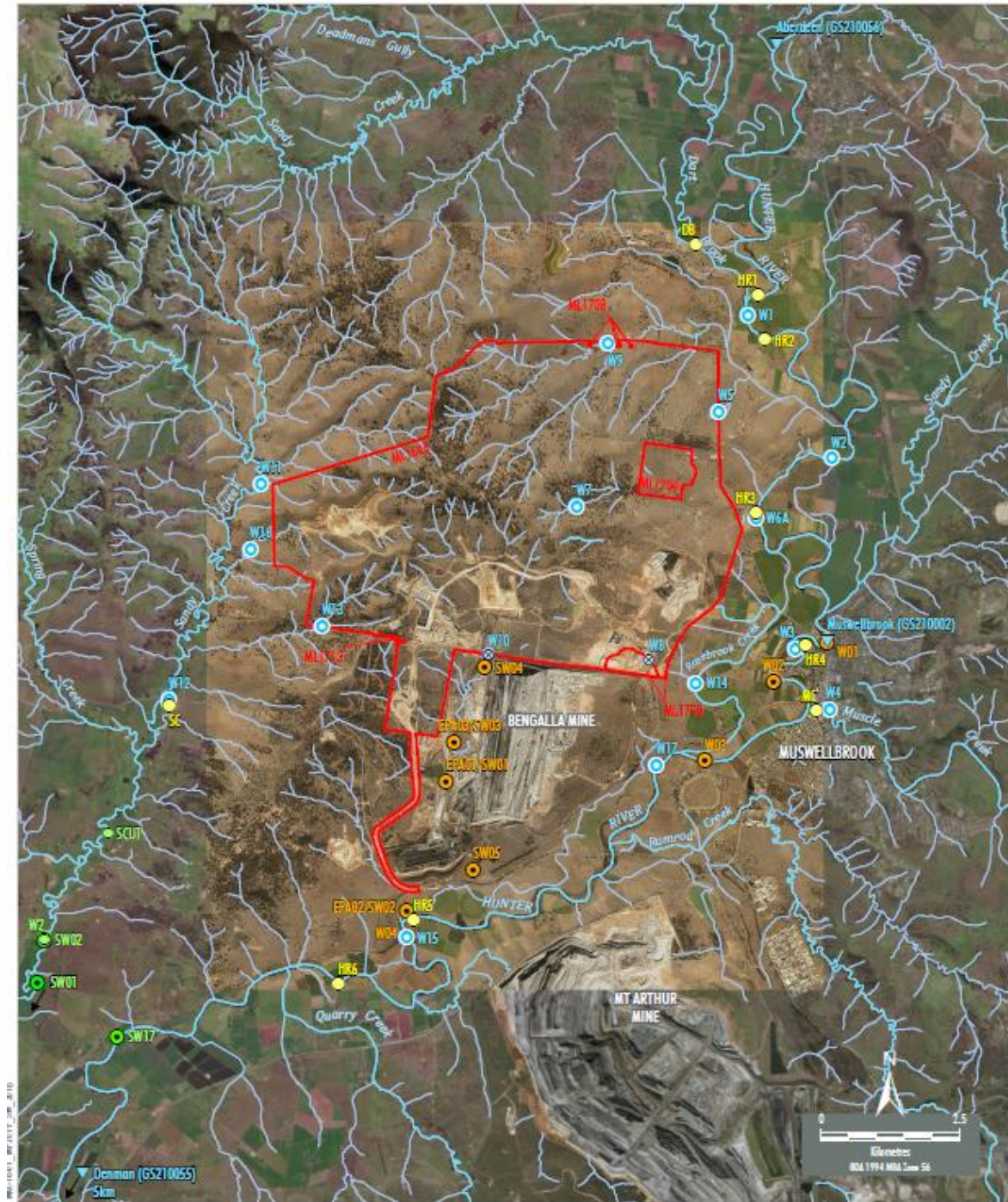
- LEGEND**
- Mining Lease Boundary
 - Mount Pleasant Monitoring
 - Strandpipe
 - Strandpipe - Alluvium
 - Strandpipe - Historical
 - Planned Mount Pleasant Monitoring
 - Strandpipe - Coal Seam
 - Strandpipe - Interburden
 - Strandpipe - Alluvium
 - Borehole Monitoring
 - Strandpipe
 - Vibrating Wire Piezometer

Source: NSW Land & Property Information (2019); NSW Division of Resources & Energy (2019); MACH Energy (2019)

Note: Refer Figure 3 for geology legend

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MOUNT PLEASANT OPERATION
Augmentations to the
Groundwater Monitoring Network

Figure 2-4 – MPO Groundwater Monitoring Network



- LEGEND**
- Mining Lease Boundary
 - ▽ DPI Water Gauging Station
 - Mt Pleasant Monitoring
 - Surface Water Monitoring Site
 - ⊗ Historical Surface Water Monitoring Site
 - Stream Health Monitoring Site
 - Mangoola Monitoring
 - Surface Water Monitoring Site
 - Stream Health Monitoring Site
 - Bengalla Monitoring
 - Surface Water Monitoring Site

Source: NSW Land & Property Information (2019); NSW Division of Resources & Energy (2019); NSW Department of Primary Industries - Water (2016); Bengalla Mining Company (2015); Mangool Coal Operations Pty Ltd (2014)
 Orthophoto: MACH (Jul 2018); Esri, DigitalGlobe (2018)

MACH Energy
 MOUNT PLEASANT OPERATION
 Surface Water and Stream Health
 Monitoring Sites

Figure 2-5 – MPO Surface Water Monitoring Network

3. Meteorological Monitoring

Weather data is measured continuously at the Kayuga Road (M-WS4) and the Wybong Road (M-WS2) meteorological stations. In addition to air quality parameters (PM₁₀ and PM_{2.5}), the weather stations measure wind speed and direction, temperature (at 2 metres (m) and 10m), temperature inversion (using the sigma theta method), solar radiation, relative humidity, rainfall and atmospheric pressure.

Most meteorological data was captured at M-WS4 (>97.2%) during March 2024.

Throughout March 2024, there was 48.0mm and 33.2mm of rainfall recorded at M-WS2 and M-WS4, respectively.

4. Dust Depositional Monitoring

4.1 Methodology

Dust deposition was monitored according to the OEH's *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (DECC 2007), which references *Australian Standard (AS)/New Zealand Standard (NZS) 3580.10.1:2016 Methods for Sampling and Analysis of Ambient Air: Determination of particulate matter – Deposited matter – Gravimetric Method*. The dust deposition monitoring network comprises of 13 dust deposition gauges (DDG). Details of the monitoring locations are shown in **Figure 2-2**.

DDG samples can be contaminated by a variety of means, notably by the presence of insects and bird droppings. Results for contaminated gauges were not included in the calculation of the annual averages as this would result in skewed or misleading results for the purpose of dust deposition assessment. The Australian Standard does not provide criteria for the determination of contamination of a DDG. AECOM determines a gauge sample to be contaminated only after reference to field observation sheets, historical monitoring location data, laboratory notes and results, prevailing atmospheric conditions, and feedback from field technicians. For example, a gauge sample with a statistically abnormally high insoluble solids result, a low ash residue result (indicating an elevated level of organic matter) and field notation that bird droppings or insects were present is likely to be considered contaminated.

While the new SSD 10418 doesn't explicitly mention dust deposition gauges, there's a notable shift in regulations towards embracing high volume air sampler results and continuous air quality monitoring programs, with a specific focus on total particulate matter, PM₁₀, and PM_{2.5}. These modern monitoring techniques offer a more comprehensive approach to environmental surveillance, furnishing real-time data and insights into air quality conditions. By harnessing these advanced methods, MPO can ensure the implementation of robust monitoring practices, effectively supplanting the older dust deposition gauges. This transition from the previous development consent DA92/97 (which is yet to be surrendered due date as of March 2025) to SSD 10418 signifies a proactive measure towards upholding environmental compliance. Therefore, Dust Depositional Monitoring will continue to be included in monthly reporting as per DA92/97 up until surrender where it will be discontinued.

4.2 Results

The dust deposition exposure period for gauges commenced on 26 February 2024. Sample collection was undertaken on 28 March 2024 by AECOM with sample analysis performed by ALS, a National Accreditation and Testing Authority (NATA) accredited laboratory. Results are summarised in **Table 4-1**. Annual rolling averages for March 2024 have been provided as an indication of performance between March 2023 – March 2024 and does not represent annual average results for 2024 as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

Table 4-1: Dust Depositional Results – March 2024

Location	YTD Insoluble Solids (g/m ² .month)	Insoluble Solids Annual Rolling Average (g/m ² .month)
D1	1.7	1.7
D3	1.5	1.8
D4	1.4	1.2
D5a	1.7	2.6
D6	1.9	2.4
D7b	7.4	8.1
D8	5.7	4.4
D9a	5.0	4.2
D10	1.2	1.1
D11	3.6	3.2
D12	13	1.0
D13	1.5	1.2
D14	3.1	3.2
Criterion	-	4

Notes:

Results in **bold** indicate an elevated measurement of adopted assessment criteria.

* Insufficient monthly results to calculate annual average

Contaminated results, as described in Section 4.1, are not included in the 12-month rolling average. Site D7b is located within close proximity to the northern boundary of a neighbouring mining operation and thus can be influenced by this site. D7b will continue to be monitored, however will not be used to assess compliance or to represent residential receivers in the area. Furthermore, there are no privately-owned receivers in the vicinity of D8, D9 and D14. Whilst these sites do not represent residence(s) on privately-owned land, they will continue to be monitored in accordance with the *MPO Air Quality and Greenhouse Gas Management Plan* (MACH Energy, 2019).

Field notes from the March sampling event noted that all the gauges contained insects, one contained vegetation and two contained bird droppings. Filed notes indicated that there were Bats located in the tree nearby gauge D3a, contents were clear in colour and turbidity. Dust gauges D8, D9a and D14 were noted to be light grey in colour and slightly turbid. It was noted that the bird ring had broken off the stand of gauge D7b. All other March 2024 insoluble solid results were included in the annual rolling average calculations.

Figure 4-1 compares the monthly insoluble solids results to the annual averages for each dust gauge and the assessment criterion.

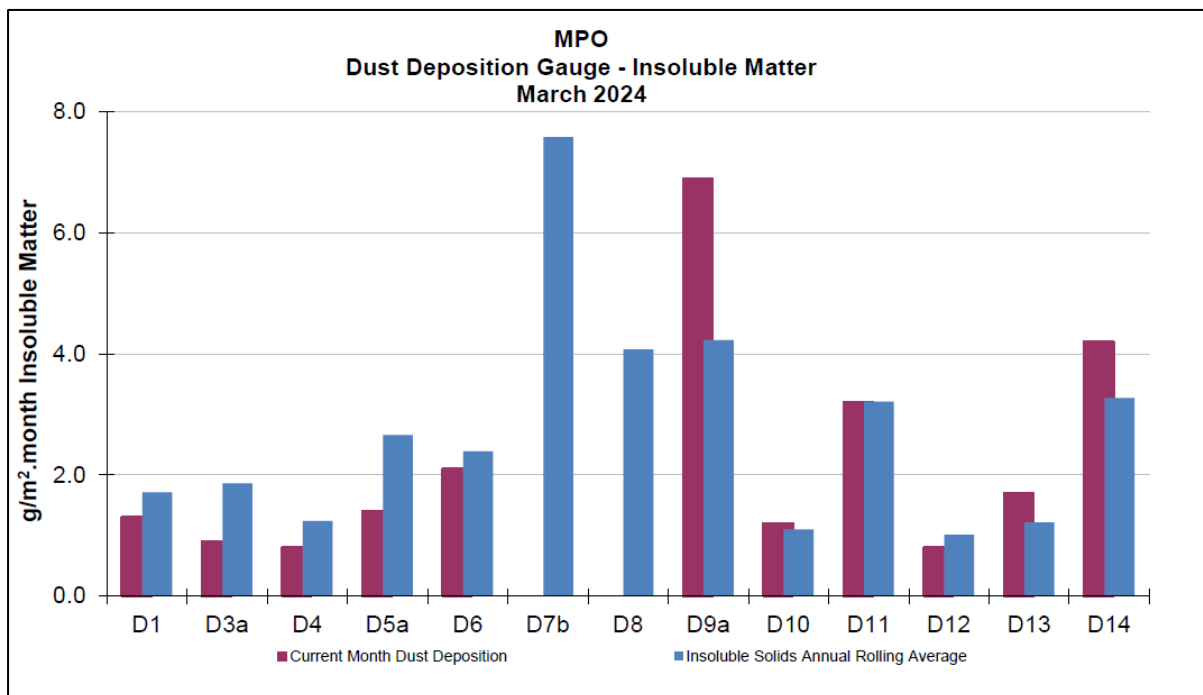


Figure 4-1: MPO Dust Deposition Monthly Results and Annual Rolling Average – March 2024

5. Total Suspended Particulates

All High-Volume Air Samplers (HVAS) are run for 24 hours every six days in accordance with *AM-15 of Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (DECC, 2007), referencing *AS/NZS 3580.9.3:2015 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total suspended particulate matter (TSP) - High volume sampler gravimetric method*, for the monitoring of TSP.

Three TSP HVAS units are included in the MPO air quality monitoring network and are displayed in **Table 5-1** below. These units were commissioned in March 2017.

Table 5-1 Total Suspended Particulate Monitoring Sites

ID	Description
A-PF2	Reilly's
M-WS4	Kayuga Road Met Station
A-PF5	Athlone

5.1 Assessment Criteria

TSP is assessed against the guidelines defined in the *EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA 2016), Project Approval DA 92/97 and Development Consent SSD 10418. The DA 92/97 and SSD 10418 both specify an annual average project contribution plus background criterion of 90 µg/m³.

5.2 Results

Sample collection was undertaken by AECOM with sample analysis performed by ALS, a NATA accredited laboratory. TSP results for the monitoring period are provided in **Table 5-2**. Annual rolling averages for March 2024 have been provided as an indication of performance between March 2023 – March 2024 and do not represent annual average results for 2024 as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

Table 5-2 Total Suspended Particulate Monitoring Data – March 2024

Run Date	Assessment Criterion	TSP µg/m ³		
		HVAS A-PF2	HVAS A-PF5	HVAS M-WS4
6/03/2024	-	73.0	81.1	60.8
12/03/2024	-	76.0	13.6	70.4
18/03/2024	-	21.3	46.4	19.7
24/03/2024	-	39.8	44.3	27.5
30/03/2024	-	47.7	66.2	46.8
*Monthly Mean	-	51.6	74.8	45.0
Annual Rolling Average	90	60	56	39

Notes:

Results in **bold** indicate an elevated reading.

Results have been rounded to one decimal place for reporting purposes where applicable.

5.3 Discussion

For the reporting period, the annual rolling average TSP data at all sites was below the annual average criterion of 90 µg/m³.

6. Real Time Air Quality Monitoring

Continuous particulate matter less than 10 µm (PM₁₀) and particulate matter less than 2.5 µm (PM_{2.5}) monitoring was conducted by three Palas Fidas units (one utilised for management only) at MPO during March 2024.

The EPA identification numbers 1 and 2 refer to Palas Fidas units installed on Wybong Road (A-PF2) and Dorset Road (A-PF5), respectively. In addition, a third unit (A-PF4) is installed on Kayuga Road with data used for management purposes only.

Real time PM₁₀ and PM_{2.5} 12-month rolling averages for March 2024 have been provided in Section 6.2 and 6.4 respectively, as an indication of performance during 2024 as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

6.1 PM₁₀ Results – 24 Hour Rolling Average

In accordance with the DA 92/97 and SSD 10418 limit of 50 µg/m³ for the 24-hour daily average, there were two elevated readings in March 2024. Real time PM₁₀ 24 hour daily average results for March 2024 are presented in **Table 6-1**.

Table 6-1: MPO Palas Fidas PM₁₀ Data – March 2024

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2	Muswellbrook NW	A-PF2, A-PF4, A-PF5 24 Hour Average Limit (µg/m ³)
	24-hour Average Result				
1/03/2024	33	21	-	22.9	50
2/03/2024	45	25	-	-	50
3/03/2024	40	34	-	32.2	50
4/03/2024	33	28	-	30.3	50
5/03/2024	25	17	-	19.9	50
6/03/2024	28	24	-	27.1	50
7/03/2024	29	24	-	27.3	50
8/03/2024	17	13	-	12.8	50
9/03/2024	18	16	-	17.6	50
10/03/2024	17	14	-	16.9	50
11/03/2024	28	22	-	22.4	50
12/03/2024	31	26	-	29.4	50
13/03/2024	33	26	-	26.2	50
14/03/2024	30	28	-	26.7	50
15/03/2024	18	13	-	14.5	50
16/03/2024	21	14	-	14.6	50
17/03/2024	13	12	-	9.5	50
18/03/2024	12	10	-	7.2	50
19/03/2024	14	13	-	10.5	50
20/03/2024	17	12	10	13.4	50
21/03/2024	21	16	16	19.8	50
22/03/2024	18	16	21	14.1	50
23/03/2024	25	16	22	14.7	50
24/03/2024	18	14	14	17	50
25/03/2024	20	12	10	17.4	50
26/03/2024	25	19	29	23.4	50
27/03/2024	24	17	19	19.5	50
28/03/2024	23	18	22	19.4	50
29/03/2024	18	14	-	12.7	50
30/03/2024	181	20	-	16.6	50
31/03/2024	80	18	-	15.1	50

Notes:

Results in **bold** indicate elevated readings during adverse weather conditions.

Results with "-" indicate dates where data was affected by maintenance or servicing (scheduled and unscheduled)

Figure 6-1 below shows the results of real-time PM₁₀ 24 hour daily average results at MPO air quality monitoring sites March 2024.

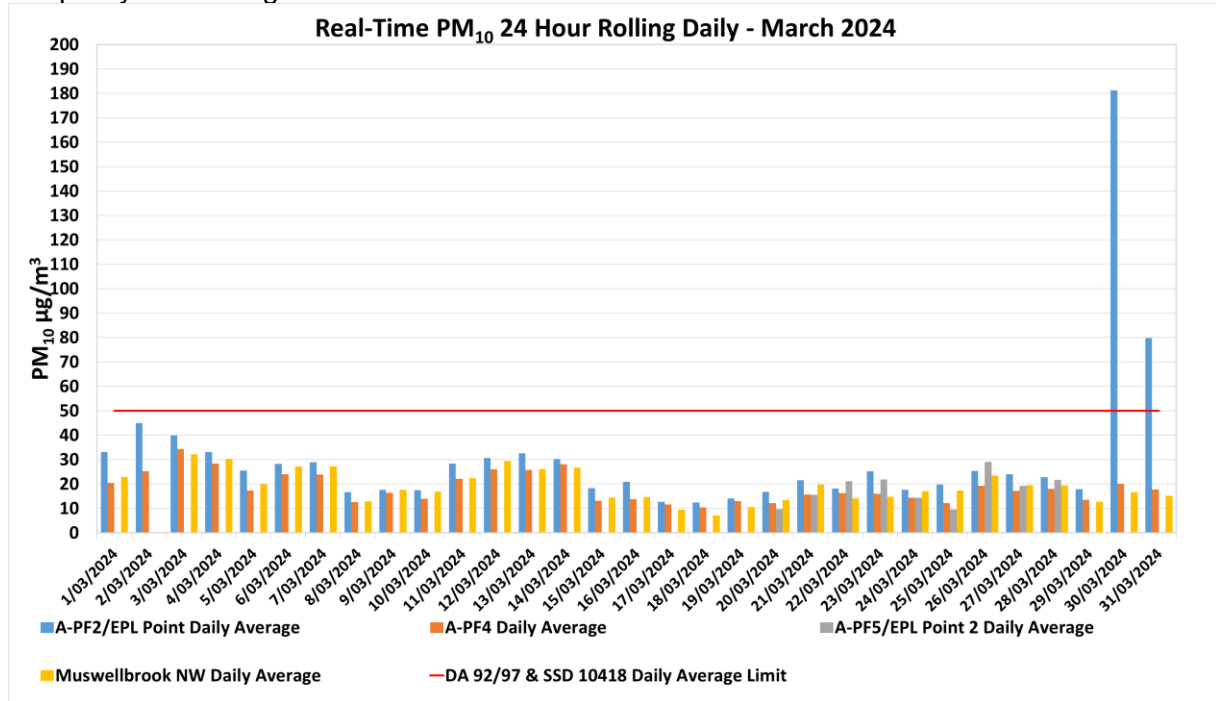


Figure 6-1: Real-time PM₁₀ 24 Daily Average Results for March 2024.

6.2 PM₁₀ Results – Annual Rolling Average

There was no exceedance of the PM₁₀ annual rolling average reported at MPO during March 2024. Real time PM₁₀ annual rolling averages during the reporting period are presented in Figure 6-2 below.

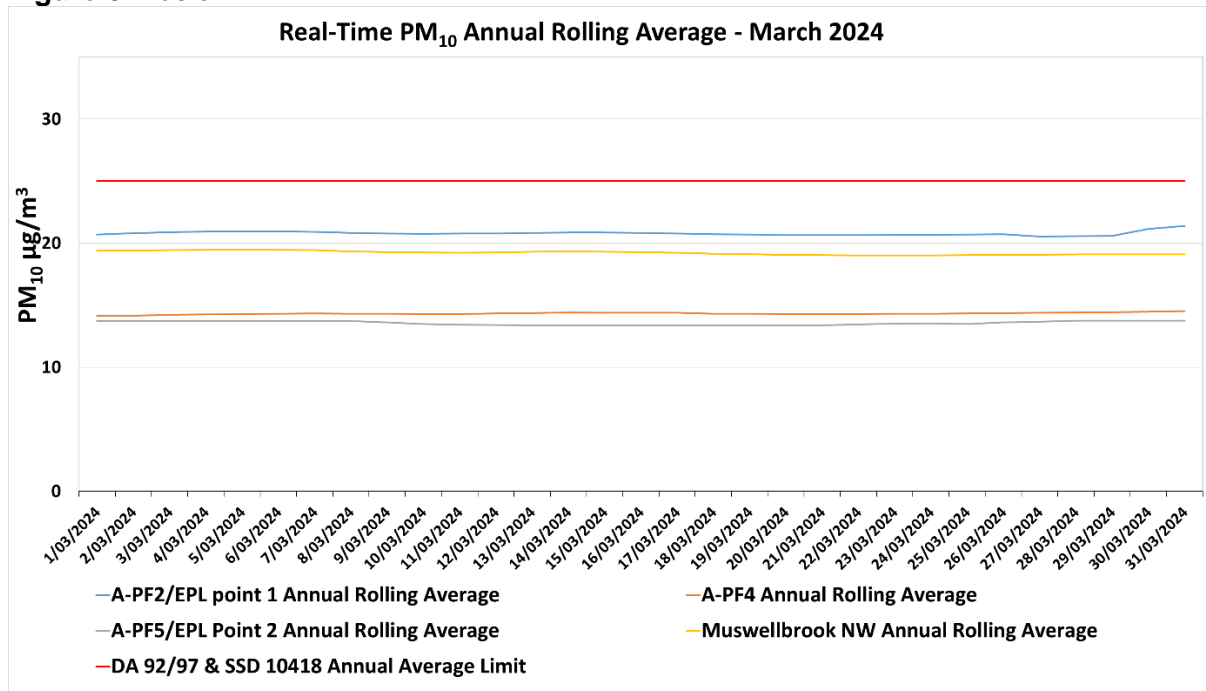


Figure 6-2: Real-time PM₁₀ Annual Rolling Average Results for March 2024.

6.3 PM_{2.5} Results – 24 Hour Daily Average

There was no exceedance of the PM_{2.5} annual rolling average reported at MPO during March 2024. Real time PM_{2.5} 24 hour rolling average results for March 2024 are presented in **Table 6-2**.

Table 6-2: MPO Palas Fidas PM_{2.5} Data – March 2024

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2	A-PF2, A-PF4, A-PF5 24 Hour Average Limit (µg/m ³)
	24-hour Average Result			
1/03/2024	12	7	-	25
2/03/2024	18	9	-	25
3/03/2024	11	9	-	25
4/03/2024	12	9	-	25
5/03/2024	8	6	-	25
6/03/2024	7	7	-	25
7/03/2024	8	7	-	25
8/03/2024	6	5	-	25
9/03/2024	6	5	-	25
10/03/2024	6	5	-	25
11/03/2024	7	6	-	25
12/03/2024	7	7	-	25
13/03/2024	8	7	-	25
14/03/2024	9	9	-	25
15/03/2024	6	5	-	25
16/03/2024	6	5	-	25
17/03/2024	5	5	-	25
18/03/2024	6	5	-	25
19/03/2024	6	5	-	25
20/03/2024	6	5	4	25
21/03/2024	7	6	6	25
22/03/2024	6	5	5	25
23/03/2024	6	5	6	25
24/03/2024	6	5	5	25
25/03/2024	6	5	4	25
26/03/2024	7	6	6	25
27/03/2024	11	8	7	25
28/03/2024	9	8	7	25
29/03/2024	7	6	-	25
30/03/2024	16	8	-	25
31/03/2024	11	8	-	25

Notes:

Results in **bold** indicate elevated readings during adverse weather conditions.

Results with "-" indicate dates where data was affected by maintenance or servicing (scheduled and unscheduled)

Real time PM_{2.5} 24-hour average results for March 2024 are presented in **Figure 6-3** below.

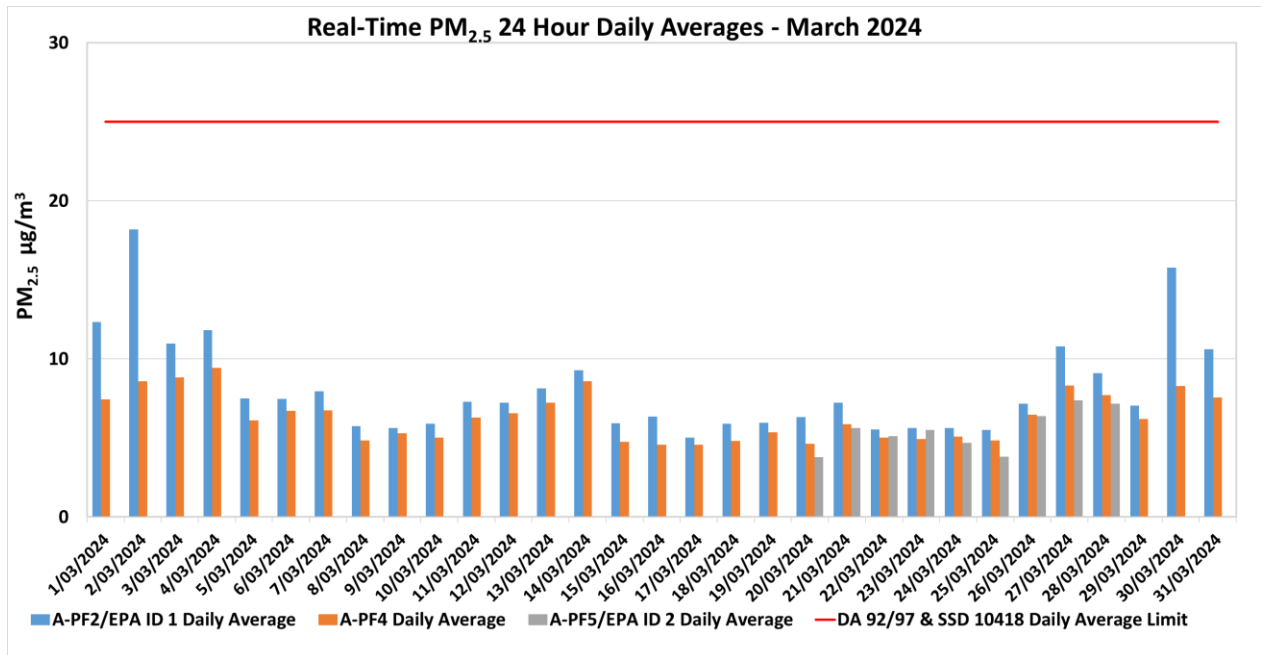


Figure 6-3: Real-time PM_{2.5} 24 hour Daily Average Results for March 2024.

6.4 PM_{2.5} Results - Annual Rolling Average

There was no exceedance of the PM_{2.5} annual rolling average reported at MPO during March 2024. Real time PM_{2.5} annual rolling averages during the reporting period are presented in **Figure 6-4** below.

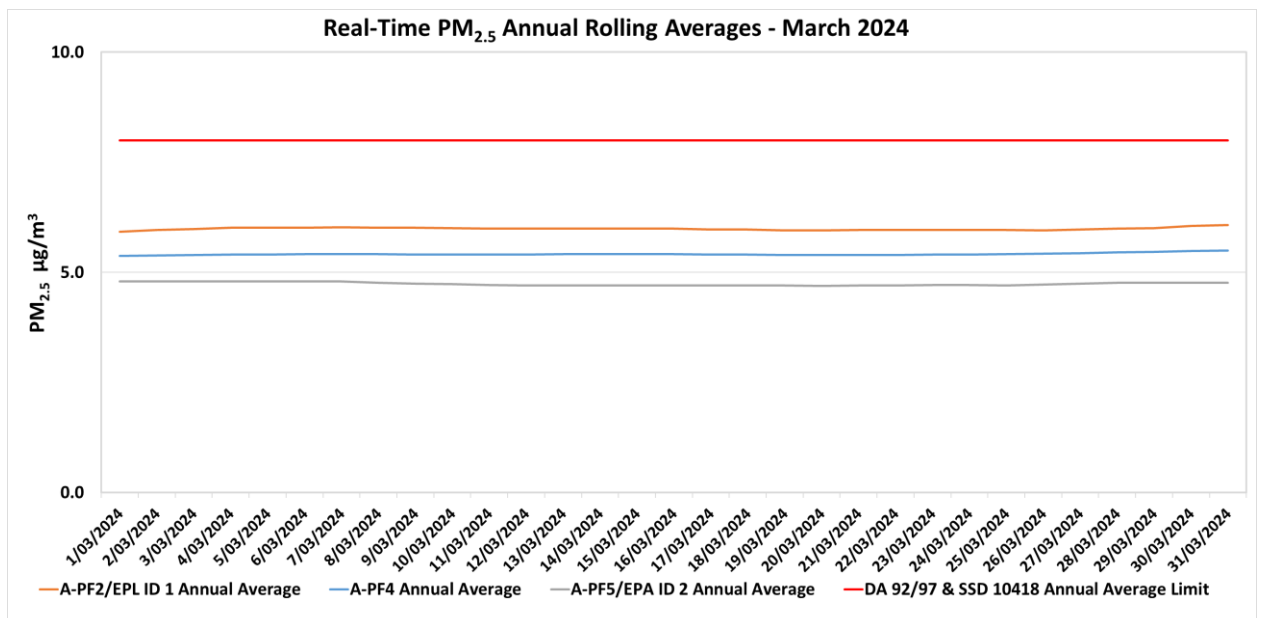


Figure 6-4: Real-time PM_{2.5} Annual Rolling Average Results for March 2024.

7. Surface Water Monitoring

7.1 Methodology

Surface water quality is monitored at 14 sites on a monthly basis, with additional monitoring conducted if triggered by a rain event. A more comprehensive suite of analysis is performed at these sites on a quarterly basis.

7.2 Assessment Criteria

Surface waters were assessed as per the [MPO Water Management Plan](#) (MACH Energy, 2022) in accordance with site specific trigger values that have been developed using the [ANZECC](#) (2000) guidelines for sites that contain a minimum of two years of monthly data. Sites with insufficient data are assessed on default trigger values adopted from ANZECC (2000) guidelines.

7.3 Results

Surface water monitoring was conducted by AECOM on 27 March 2024. Laboratory analysis was performed by ALS NATA accredited laboratory. Monthly monitoring results for pH, EC, TSS and Total Dissolved Solids (TDS) are presented in **Table 7-1**.

Table 7-1 – MPO Monthly Surface Water Monitoring Results – 27 March 2024

Station	pH	Electrical Conductivity (EC) ($\mu\text{s}/\text{cm}$) ¹	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
W1	8.2	420	230	5.8
W2	8.2	430	260	21
W3	8.1	470	230	15
W4	7.6	1750	1000	9.6
W5	*	*	*	*
W6A [^]	8.3	430	260	8.1
W9	*	*	*	*
W11	8.0	4300	2300	< 5
W12	8.2	5350	3000	9.4
W13	*	*	*	*
W14	*	*	*	*
W15	8.1	480	290	21
W16	*	*	*	*
W17	8.1	460	260	13

Note: Results in **bold** indicate exceedances of adopted assessment criteria.

*Dry or insufficient water to sample.

[^] Site sampled at alternative location due to site being overgrown and requiring maintenance.

¹ Results have been rounded in accordance with the In-house method Q4AN(EV)-332-W12 (EC).

During the 27 March monitoring event, five (5) sites were dry or contained insufficient water to sample. All sites were within their respective EC and pH levels. All sites were below their respective TSS trigger levels except for W2 which recorded 21mg/L.

An investigation is triggered if elevated measurements occur for three consecutive sampling events in accordance MPO Water Management Plan (MACH Energy, 2022).

8. Groundwater Monitoring

Groundwater monitoring did not occur during this reporting period. The next quarterly monitoring event is scheduled for May 2024.

9. Noise Monitoring

Attended noise monitoring was undertaken during the night period of 19/20 March 2024 at eight (8) monitoring locations as per the [MPO Noise Management Plan](#) (MACH Energy, 2021) in accordance with DA 92/97, SSD 10418 and EPL 20850.

9.1 Results

The results for nighttime attended noise monitoring for noise generated by MPO in March 2024 against noise criteria is shown in **Table 9-1**; **Table 9-2**; and **Table 9-3**.

Table 9-1 – $L_{A1,1min}$ Generated by MPO: Attended Night Monitoring – 19/20 March 2024

Location	Start Date and Time	MPO Only $L_{A1,1min}$ dB ^{2,4}	Criterion dB	Wind Speed m/s	Criterion Applies ¹	Stability Class	Exceedance dB ³
N-AT1	20/03/2024 01:22	37	45	0.3	Yes	F	No
N-AT2	19/03/2024 22:40	IA	45	0.9	Yes	D	No
N-AT3	19/03/2024 23:13	IA	45	0.9	Yes	F	No
N-AT4	19/03/2024 23:40	29	45	0.6	Yes	F	No
N-AT5	20/03/2024 00:04	36	45	0.6	Yes	D	No
N-AT6	20/03/2024 00:59	IA	45	0.2	Yes	F	No
N-AT7	19/03/2024 22:00	IA	45	0.7	Yes	F	No
N-AT8	20/03/2024 00:32	45	NA ⁶	0.3	Yes	F	No

Notes:

- As per Condition L2.3 of EPL 20850, noise emission limits do not apply during wind speeds greater than 3m/s at 10m above ground level, or 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.
- Estimated or measured $L_{A1,1minute}$ attributed to MPO.
- NA in exceedance column means meteorological conditions outside those specified in Condition L2.3 of EPL 20850 and thus criterion is not applicable.
- IA = inaudible; and
- Bold results indicate exceedance of criteria.
- This is not a compliance monitoring location.

Table 9-2 – $L_{Aeq,15min}$ Generated by MPO: Attended Night Monitoring – 19/20 March 2024

Location	Start Date and Time	MPO Only $L_{A1,1min}$ dB ^{2,4}	Criterion dB	Wind Speed m/s	Criterion Applies ¹	Stability Class	Exceedance dB ³
N-AT1	20/03/2024 01:22	31	37	0.3	Yes	F	No
N-AT2	19/03/2024 22:40	IA	35	0.9	Yes	D	No
N-AT3	19/03/2024 23:13	IA	40	0.9	Yes	F	No
N-AT4	19/03/2024 23:40	22	38	0.6	Yes	F	No
N-AT5	20/03/2024 00:04	32	37	0.6	Yes	D	No
N-AT6	20/03/2024 00:59	IA	35	0.2	Yes	F	No
N-AT7	19/03/2024 22:00	IA	37	0.7	Yes	F	No
N-AT8	20/03/2024 00:32	39	NA ⁶	0.3	Yes	F	No

Notes:

- As per Condition L2.3 of EPL 20850, noise emission limits do not apply during wind speeds greater than 3m/s at 10m above ground level, or 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.
- Estimated or measured $L_{Aeq,15minute}$ attributed to MPO.
- NA in exceedance column means meteorological conditions outside those specified in Condition L2.3 of EPL 20850 and thus criterion is not applicable.
- IA = inaudible; and
- Bold results indicate exceedance of criteria.
- This is not a compliance monitoring location.

Table 9-3 – $L_{Aeq, period}$ Cumulative Noise: Attended Night Monitoring – 19/20 March 2024

Location	Start Date and Time	Cumulative Noise Criterion L_{Aeq} dB	Measured Mining Only $L_{Aeq, period}$ dB ^{1,2}	Exceedance dB ³
N-AT1	20/03/2024 01:22	40	31	No
N-AT2	19/03/2024 22:40	40	IA	No
N-AT3	19/03/2024 23:13	40	IA	No
N-AT4	19/03/2024 23:40	40	22	No
N-AT5	20/03/2024 00:04	40	32	No
N-AT6	20/03/2024 00:59	40	IA	No
N-AT7	19/03/2024 22:00	40	IA	No
N-AT8	20/03/2024 00:32	NA ⁴	39	No

Notes:

- These are the results for MPO and all other mining sources. 15-minute measurements have been assumed to apply across the entire night period as a conservative measure and to represent "worst case" results; and
- By definition, cumulative noise refers to two or more noise sources. If only one other source of mining is audible, or if MPO is inaudible, the measured cumulative noise defined here is 'Nil'.
- NA in exceedance column means criterion was not applicable due to atmospheric conditions.
- This is not a compliance monitoring location.

The purpose of the noise monitoring is to quantify and describe the existing acoustic environment around the mining operation and compare results with relevant limits as per the *MPO Noise Management Plan* (MACH Energy, 2021).

10. Blast Monitoring

There were 8 blast events during March (a total of 20 blasts YTD). Results for March 2024 are presented in **Table 10-1**. All blast results during this monitoring period were below the criteria stated in Schedule 3, Condition 10 of DA 92/97, Schedule 2; Condition B12 of SSD 10418; and L5 of EPL 20850.

Table 10-1 – MPO Blast Monitoring Results - March 2024

Day & Date Fired	Time Fired	BVOC Vibration (mm/s)	BVOC Overpressure (dBL)	BVO2 Vibration (mm/s)	BVO2 Overpressure (dBL)	Blast Fume Compliant
Tuesday 05/03/2024	13:06	1.550	97.3	0.790	103.8	Y
Friday 08/03/2024	10:09	0.700	100.2	0.640	100.2	Y
Tuesday 12/03/2024	12:14	0.330	86.1	0.480	92.4	Y
Thursday 14/03/2024	13:02	0.370	95.6	0.670	95.4	Y
Wednesday 20/03/2024	15:06	0.180	92.7	0.210	96.3	Y
Thursday 21/03/2024	13:11	0.260	102.3	0.430	96.7	Y
Wednesday 27/03/2024	13:04	0.390	101.1	0.180	104.0	Y
Thursday 28/03/2024	13:07	0.150	93.4	0.280	100.0	Y

END OF REPORT