

**Mount Pleasant Operation
Monthly Environmental Monitoring Report**

April 2025

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 and SSD 10418 |
| Reporting Period Start Date | 1 April 2025 |
| Reporting Period End Date | 30 April 2025 |
| Date All Data Received | 20 May 2025 |

Links to three key regulatory documents are provided here:

- [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.

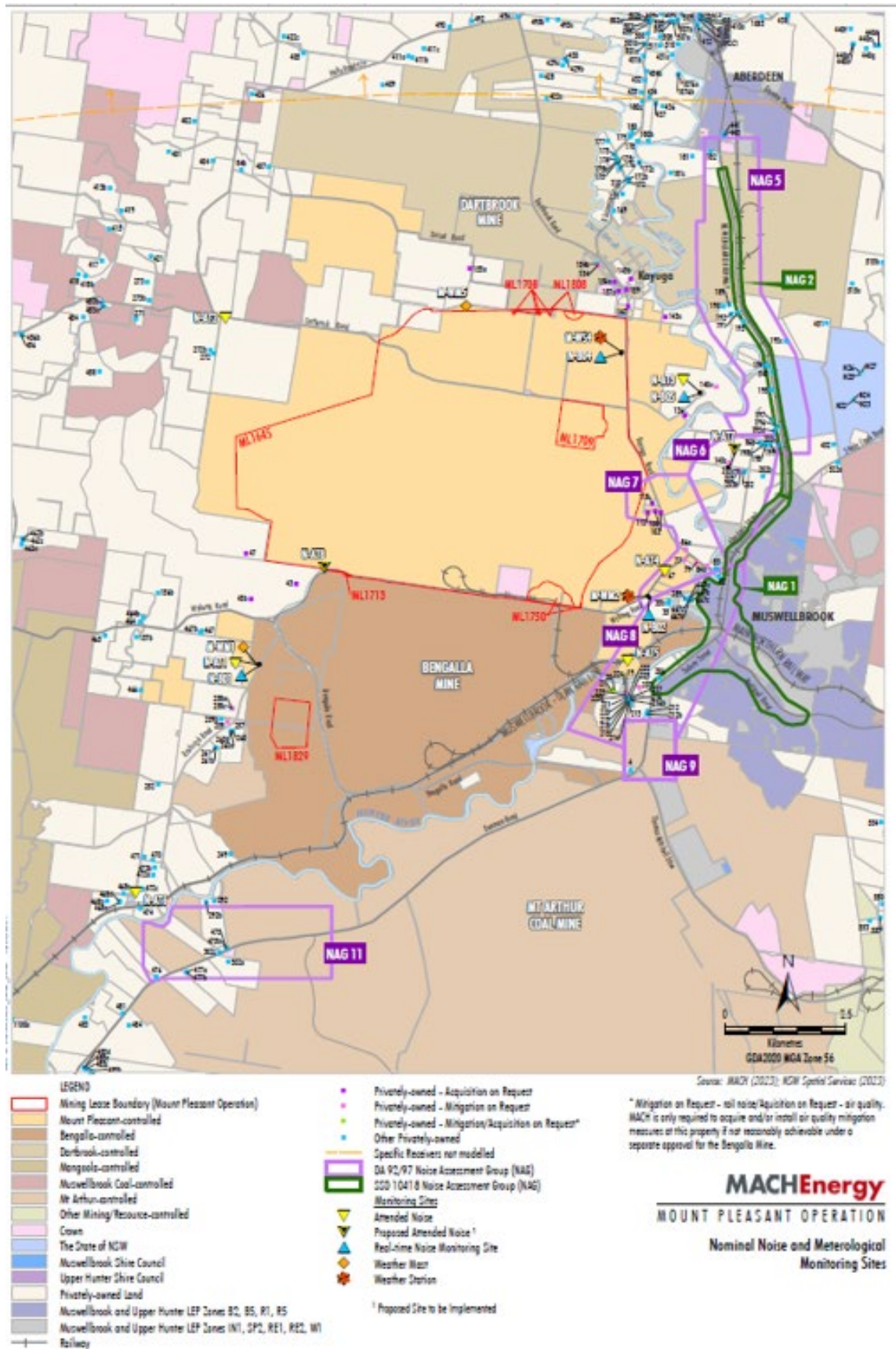


Figure 2-1 – MPO Attended Noise Monitoring Assessment Groups and Locations - Approved (SSD 10418) Water Management Plan

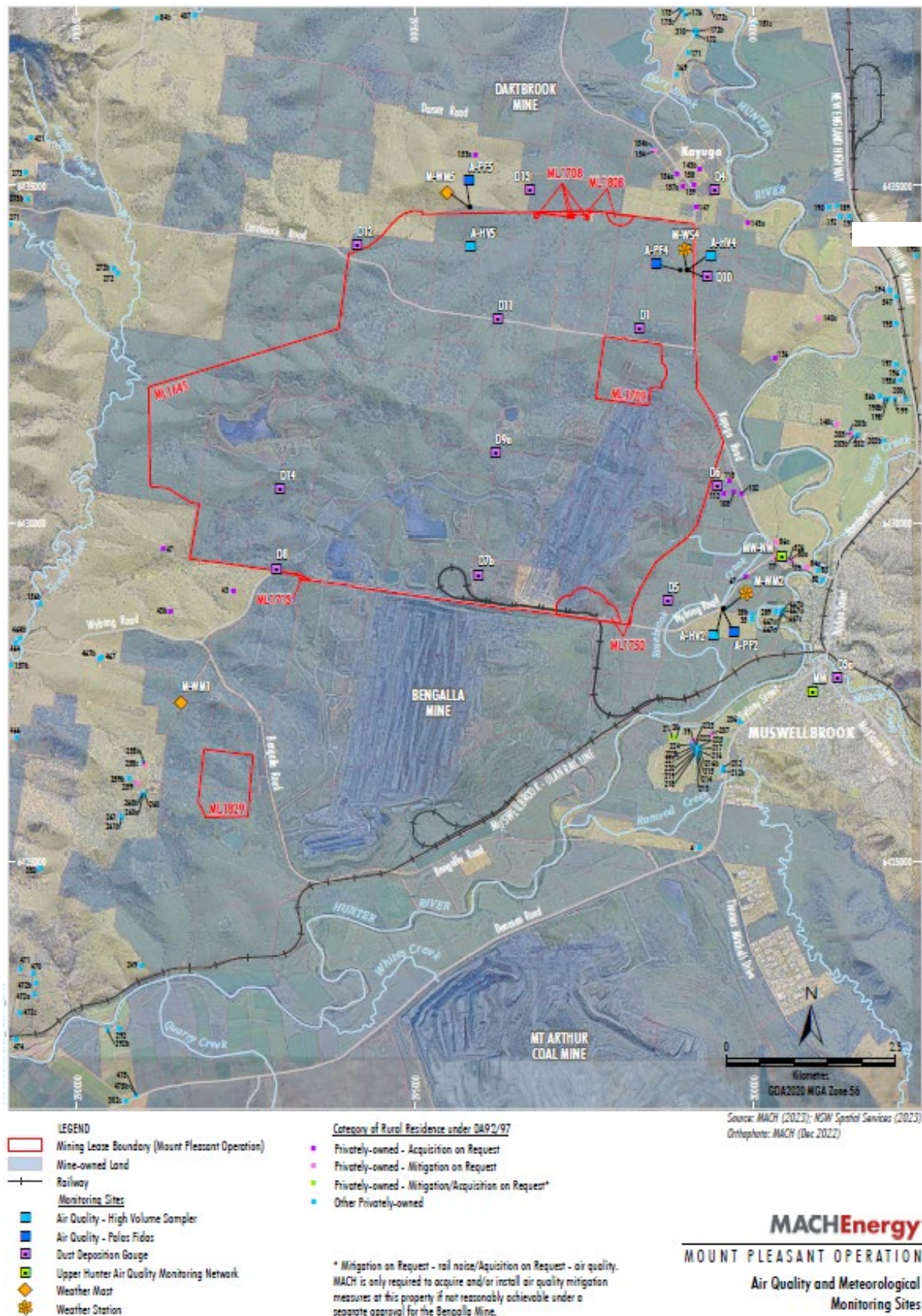


Figure 2-2 – MPO Air Quality and Meteorological Monitoring Network - Approved (SSD 10418) Water Management Plan

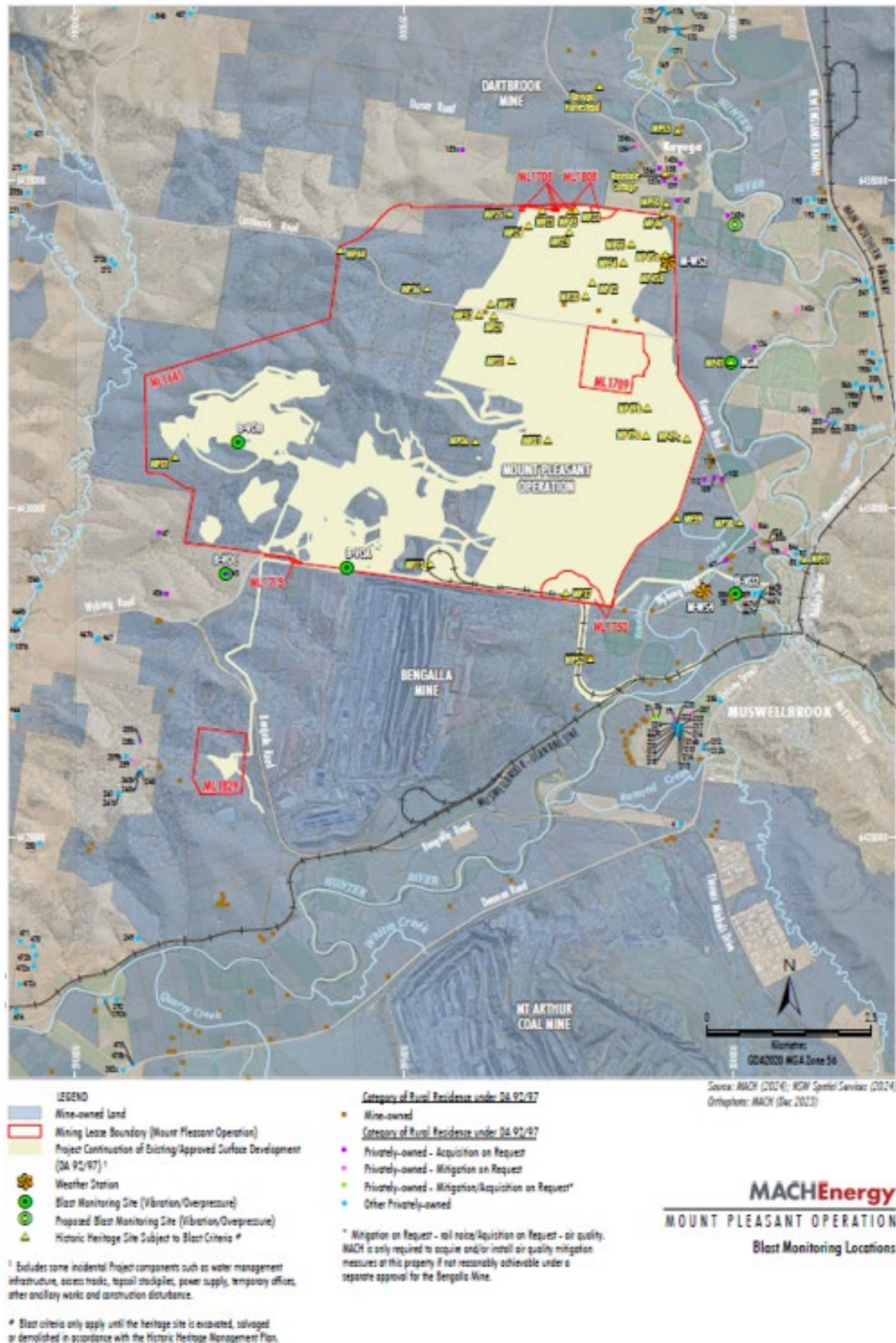
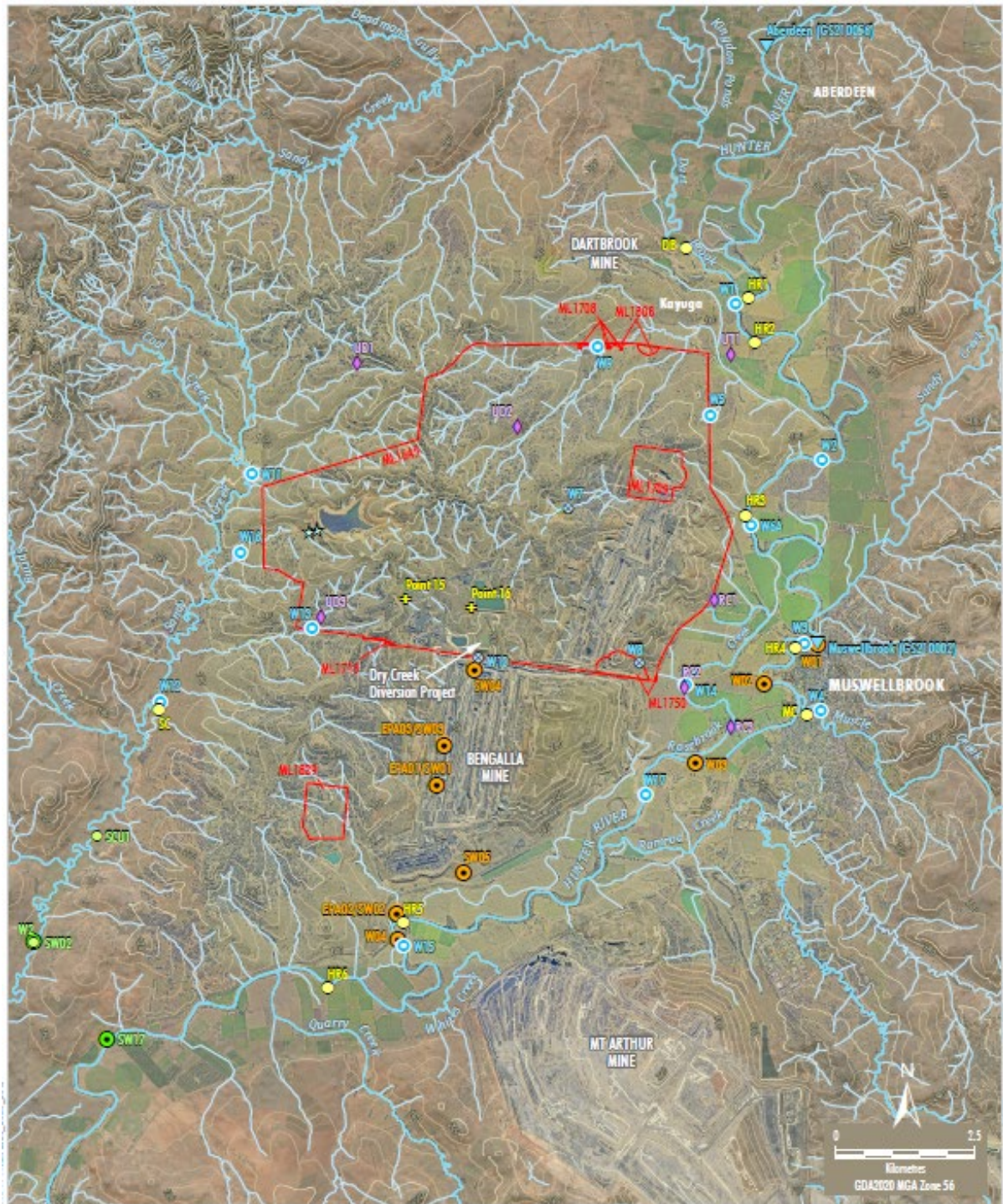


Figure 2-3 – MPO Blast Monitoring Locations

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Source: MACH (2023); NSW Spatial Services (2023); NSW Department of Primary Industries - Water (2016); Bengalla Mining Company (2015); Mangoola Coal Operations Pty Ltd (2014)
Orthophoto: MACH (Jun 2023, 2020)

MACHEnergy
MOUNT PLEASANT OPERATION
Surface Water and Stream Health
Monitoring Sites

Figure 2-5 – MPO Surface Water Monitoring Network - Approved (SSD 10418) Water Management Plan

3. Meteorological Monitoring

Weather data is measured continuously¹ at the Kayuga Road (M-WS4) and the Wybong Road (M-WS2) meteorological stations. In addition to air quality parameters (particulate matter less than 10 µm and less than 2.5 µm (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.

Meteorological data was captured at M-WS2 during April 2025 (the monitoring period). An additional monitor (E-BAM) was relocated to M-WS4 to provide additional capture for air quality. Additional meteorological data was collected at M-WS4.

Throughout April 2025, there was 43mm and 58.6mm 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) 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.

¹ The EPA's Ambient air monitoring guidance note (Guidance Note) states that after allowing sufficient down time for routine maintenance and calibrations a continuous monitoring system should be able to achieve at least a 95% availability.

4.2 Results

The dust deposition exposure period for gauges commenced on 27 March 2025 sample collection was undertaken on 28 April 2025 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 April 2025 have been provided as an indication of performance between May 2024 – April 2025 and represents 12month average results as per Schedule 3, Condition 20 of DA 92/97 and Schedule 2, Condition B28 of SSD 10418.

Table 4-1: Dust Depositional Results – April 2025

| Location | YTD Insoluble Solids (g/m ² .month) | Insoluble Solids Annual Rolling Average (g/m ² .month) |
|------------------|--|---|
| D1 | 3.8 | 2.8 |
| D3 | 2.0 | 1.5 |
| D4 | 1.3 | 1.1 |
| D5a | 1.8 | 2.1 |
| D6 | 1.8 | 1.9 |
| D7b | 8.0 | 7.8 |
| D8 | 6.3 | 4.8 |
| D9a | 5.5 | 3.7 |
| D10 | 1.2 | 1.1 |
| D11 | 6.5 | 4.0 |
| D12 | 2.3 | 1.3 |
| D13 | 3.2 | 2.0 |
| D14 | 5.4 | 3.8 |
| Criterion | - | 4.0 |

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 April sampling event noted that all thirteen gauges contained insects, two had bird droppings. Annual average dust deposition results were below the annual average criterion of 4 g/m².month at all sites except D7b (7.8 g/m²), D8 (4.8 g/m²) and D11 (4.0 g/m²) .

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

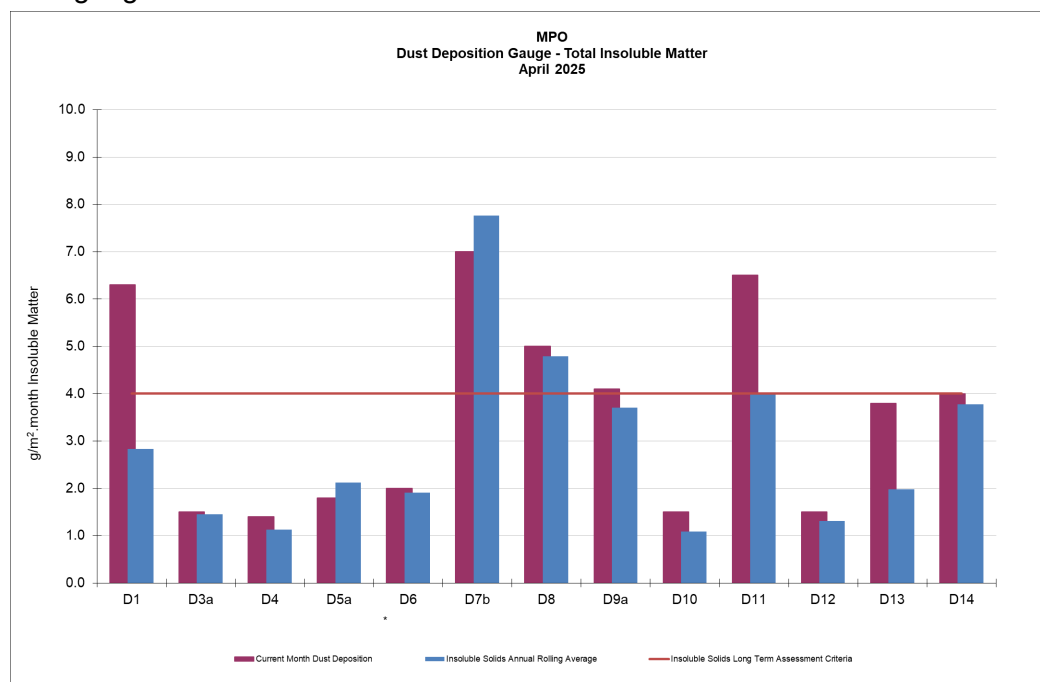


Figure 4-1: MPO Dust Deposition Monthly Results and Annual Rolling Average – April 2025

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**. Twelve month rolling averages to April 2025 is provided as an indication of performance between May 2024 – April 2025 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 – April 2025

| Run Date | Assessment Criterion | TSP µg/m ³ | | |
|-------------------------------|----------------------|-----------------------|------------|------------|
| | | HVAS A-PF2 | HVAS A-PF5 | HVAS M-WS4 |
| 6/04/2025 | - | 56.7 | 34.6 | 39.3 |
| 12/04/2025 | | 47.1 | 73.2 | 40.2 |
| 18/04/2025 | | 39 | 47.7 | 69.1 |
| 24/04/2025 | - | 21.4 | 59.5 | 22.8 |
| 30/04/2025 | - | 25.8 | 77.3 | 25.5 |
| 6/04/2025 | - | 56.7 | 34.6 | 39.3 |
| *Monthly Mean | - | 43.5 | 73.2 | 40.2 |
| Annual Rolling Average | 90 | 46 | 48 | 35 |

Notes:

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

^ Indicates makeup run results for run date 11/11/2024.

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 April 2025.

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 to April 25 have been provided in Section 6.2 and 6.4 respectively, as an indication of performance during the last 12 month 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 no elevated readings in April 2025. Real time PM₁₀ 24 hour daily average results for April 2025 are presented in **Table 6-1**.

Table 6-1: MPO Palas Fidas PM₁₀ Data – April 2025

| 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/m³) |
|------------|------------------------|-------|----------------|-----------------|---|
| | 24-hour Average Result | | | | |
| 1/04/2025 | 9.78 | 33.35 | 28.61 | 12.2 | 50 |
| 2/04/2025 | 12.59 | 26.92 | | 18 | 50 |
| 3/04/2025 | 15.17 | 21.47 | | 18.4 | 50 |
| 4/04/2025 | 15.05 | 14.16 | | 21.4 | 50 |
| 5/04/2025 | | 11.82 | | 21.8 | 50 |
| 6/04/2025 | | 10.96 | | 23.4 | 50 |
| 7/04/2025 | | 12.27 | | 21.7 | 50 |
| 8/04/2025 | | 10.77 | | 19.5 | 50 |
| 9/04/2025 | | 10.17 | | 15.4 | 50 |
| 10/04/2025 | | 12.45 | | 21.5 | 50 |
| 11/04/2025 | 16.75 | 10.65 | 12.53 | 22 | 50 |
| 12/04/2025 | 20.34 | 9.56 | 11.58 | 21.4 | 50 |
| 13/04/2025 | 12.03 | 10.50 | 12.29 | 10.5 | 50 |
| 14/04/2025 | 12.55 | 11.98 | 10.90 | 21.3 | 50 |
| 15/04/2025 | 20.81 | 12.72 | 11.04 | 17.1 | 50 |
| 16/04/2025 | 12.75 | 13.03 | 11.53 | 17 | 50 |
| 17/04/2025 | 17.12 | 15.14 | 13.99 | 19.9 | 50 |
| 18/04/2025 | 13.24 | 16.74 | 19.70 | 15.7 | 50 |
| 19/04/2025 | 18.22 | 17.07 | 21.51 | 27.4 | 50 |
| 20/04/2025 | 21.64 | 20.56 | 28.30 | 20.2 | 50 |
| 21/04/2025 | 20.61 | 16.21 | 14.23 | 27.8 | 50 |
| 22/04/2025 | 21.45 | 12.17 | 11.79 | 21.4 | 50 |
| 23/04/2025 | 12.64 | 11.21 | 13.46 | 13.6 | 50 |
| 24/04/2025 | 14.11 | 9.65 | 11.85 | 15.5 | 50 |
| 25/04/2025 | 11.37 | 10.13 | 12.28 | 10.4 | 50 |
| 26/04/2025 | 12.09 | 10.08 | 12.94 | 13.7 | 50 |
| 27/04/2025 | 11.09 | 10.44 | 22.45 | 7.3 | 50 |
| 28/04/2025 | 9.79 | 9.45 | 30.86 | 12.7 | 50 |
| 29/04/2025 | 9.79 | 9.39 | 23.08 | 12.5 | 50 |
| 30/04/2025 | 10.22 | 13.85 | 13.85 | 11 | 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 April 2025.

6.2 PM₁₀ Results – Annual Rolling Average

There was no exceedance of the PM₁₀ annual rolling average reported at MPO during April 2025. Real time PM₁₀ annual rolling averages during the reporting period are presented in **Figure 6-2** below.

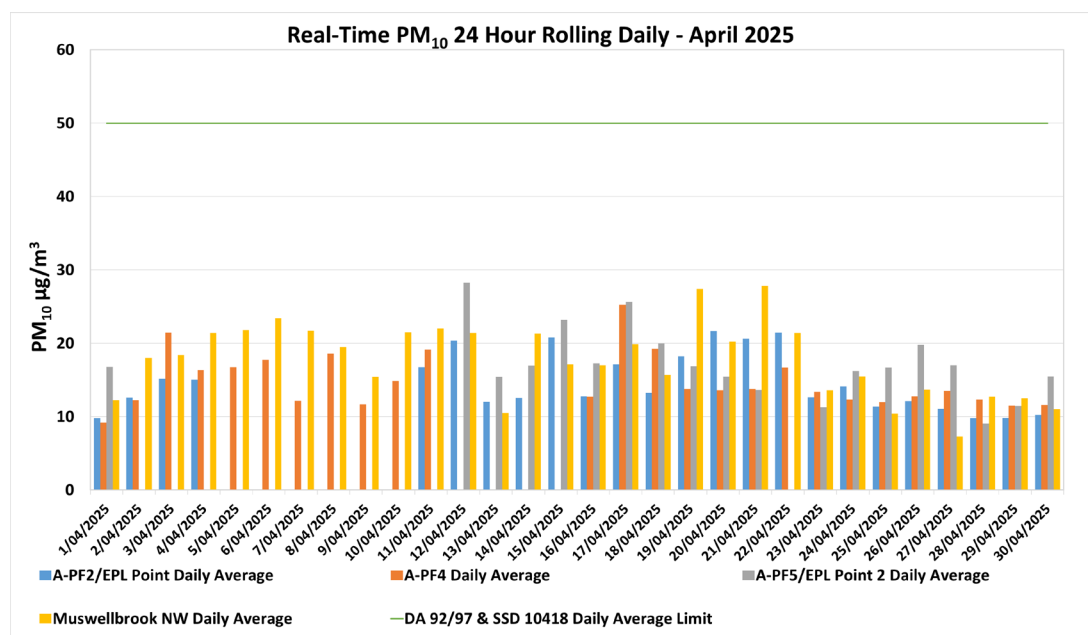


Figure 6-1: Real-time PM₁₀ 24 Daily Average Results for April 2025.

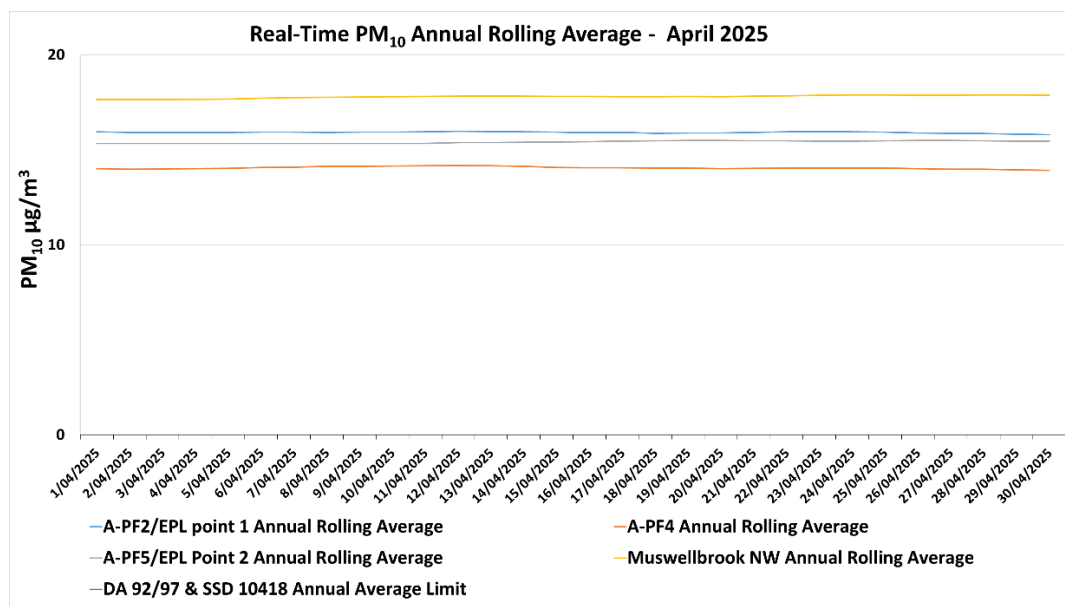


Figure 6-2: Real-time PM₁₀ Annual Rolling Average Results for April 2025.

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 April 2025. Real time PM_{2.5} 24 hour rolling average results for April 2025 are presented in **Table 6-2**.

Table 6-2: MPO Palas Fidas PM_{2.5} Data – April 2025

| Date | A-PF2/EPA ID 1 | A-PF4 | A-PF5/EPA ID 2 | A-PF2, A-PF4, A-PF5 24 Hour Average Limit (µg/m³) |
|------------|------------------------|-------|----------------|---|
| | 24-hour Average Result | | | |
| 1/04/2025 | 3.11 | 3.07 | 16.80 | 25 |
| 2/04/2025 | 4.34 | 4.43 | | 25 |
| 3/04/2025 | 5.37 | 6.56 | | 25 |
| 4/04/2025 | 5.17 | 5.40 | | 25 |
| 5/04/2025 | | 5.59 | | 25 |
| 6/04/2025 | | 5.08 | | 25 |
| 7/04/2025 | | 3.84 | | 25 |
| 8/04/2025 | | 4.66 | | 25 |
| 9/04/2025 | | 4.52 | | 25 |
| 10/04/2025 | | 4.79 | | 25 |
| 11/04/2025 | 5.02 | 5.29 | | 25 |
| 12/04/2025 | 7.37 | | 28.25 | 25 |
| 13/04/2025 | 4.83 | | 15.39 | 25 |
| 14/04/2025 | 4.03 | | 16.95 | 25 |
| 15/04/2025 | 6.80 | | 23.21 | 25 |
| 16/04/2025 | 4.21 | 4.47 | 17.25 | 25 |
| 17/04/2025 | 5.15 | 6.46 | 25.64 | 25 |
| 18/04/2025 | 4.88 | 5.76 | 19.98 | 25 |
| 19/04/2025 | 5.83 | 4.76 | 16.88 | 25 |
| 20/04/2025 | 5.45 | 4.50 | 15.44 | 25 |
| 21/04/2025 | 5.23 | 4.80 | 13.64 | 25 |
| 22/04/2025 | 4.78 | 4.41 | | 25 |
| 23/04/2025 | 4.96 | 5.00 | 11.27 | 25 |
| 24/04/2025 | 5.56 | 5.33 | 16.22 | 25 |
| 25/04/2025 | 4.93 | 4.91 | 16.69 | 25 |
| 26/04/2025 | 5.18 | 5.16 | 19.76 | 25 |
| 27/04/2025 | 4.48 | 4.72 | 17.00 | 25 |
| 28/04/2025 | 3.42 | 3.88 | 9.03 | 25 |
| 29/04/2025 | 3.75 | 4.12 | 11.45 | 25 |
| 30/04/2025 | 4.27 | 4.58 | 15.47 | 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 April 2025 are presented in **Figure 6-3** below.

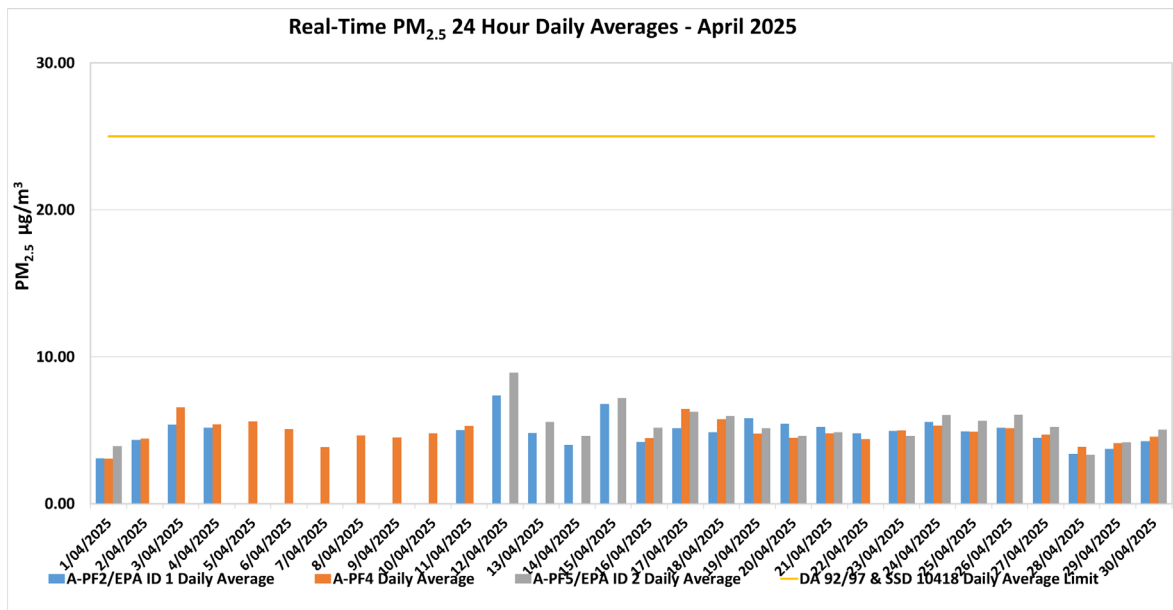


Figure 6-3: Real-time PM_{2.5} 24 hour Daily Average Results for April 2025.

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 April 2025. Real time PM_{2.5} annual rolling averages during the reporting period are presented in **Figure 6-4** below.

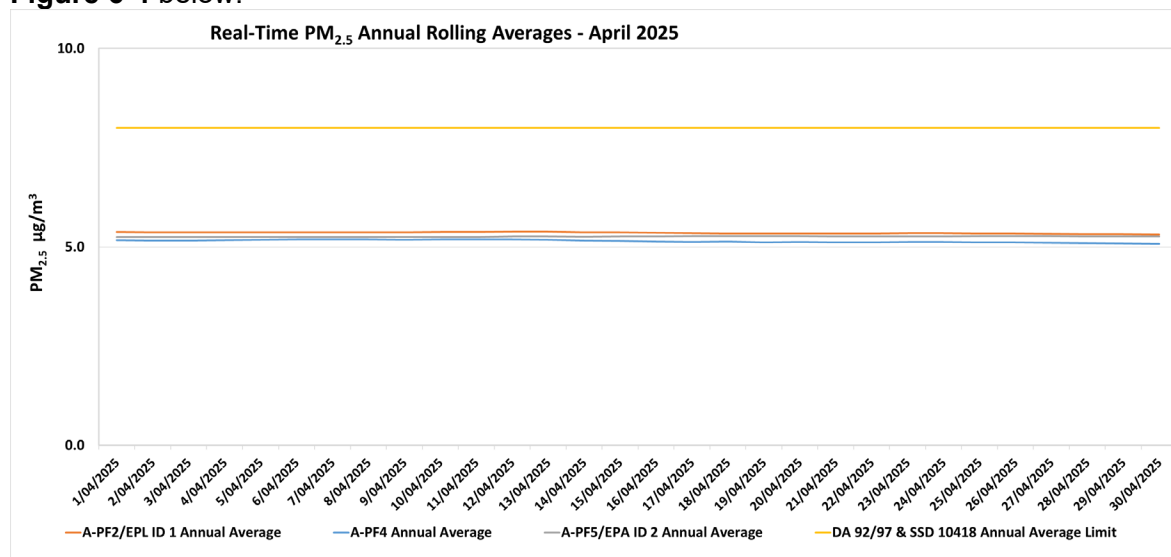


Figure 6-4: Real-time PM_{2.5} Annual Rolling Average Results for April 2025.

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, 2024) 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 25 April 2025. 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 – 25 April 2025

| Station | pH | Electrical Conductivity (EC) (µs/cm) ¹ | Total Dissolved Solids (TDS) (mg/L) | Total Suspended Solids (TSS) (mg/L) |
|---------|------------|---|-------------------------------------|-------------------------------------|
| W1 | 7.9 | 345 | 180 | 16 |
| W2 | 8.0 | 357 | 210 | 16 |
| W3 | 7.9 | 355 | 240 | 16 |
| W4 | 7.6 | 2290 | 1300 | 17 |
| W5 | * | * | * | |
| W6A | 7.9 | 356 | 210 | 21 |
| W9 | * | * | * | |
| W11 | 8.2 | 3970 | 2100 | 6 |
| W12 | 8.0 | 5480 | 3300 | 6.3 |
| W13 | * | * | * | |
| W14 | * | * | * | |
| W15 | 7.9 | 344 | 210 | 24 |
| W16 | 8.3 | 7040 | 4300 | 14 |
| W17 | 7.9 | 349 | 230 | 31 |

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

*Dry or insufficient water to sample.

** No access due to track conditions.

¹ Results have been rounded in accordance with the In-house method Q4AN(EV)-332-WI2 (EC).

During 25 April 2025 monitoring event, three (3) sites were dry. Site W11 was above pH trigger levels.

In accordance with the MPO Water Management Plan (WMP) Table 26 (MACH Energy, 2024) if a water quality indicator at a potential impact monitoring location or at a downstream receiving water monitoring location is above (or outside the range) of the site-specific trigger value for three consecutive sampling events an investigation is required.

8. Groundwater Monitoring

No groundwater sampling was undertaken in April 2025. Next annual and quarterly groundwater sampling is scheduled for May 2025.

9. Noise Monitoring

Attended noise monitoring was undertaken during the night of 28th March 2025 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 April 2025 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 – 28 April 2025

| Location | Start Date and Time | MPO Only L _{A1,1min} dB ^{2,4} | Criterion dB | Wind Speed m/s Direction ° | Criterion Applies ¹ | Stability Class | Exceedance dB ³ |
|----------|---------------------|---|-----------------|----------------------------|--------------------------------|-----------------|----------------------------|
| N-AT1 | 1:36am | IA | 45 | 0.7 / 077 | Yes | D | No |
| N-AT2 | 10:50pm | IA | 45 | 1.4 / 171 | Yes | D | No |
| N-AT3 | 11:25pm | IA | 45 | 1.2 / 161 | Yes | D | No |
| N-AT4 | 11:53pm | IA | 45 | 0.7 / 262 | Yes | E | No |
| N-AT5 | 12:15am | 26 | 45 | 0.7 / 190 | Yes | E | No |
| N-AT6 | 1:11am | IA | 45 | 1.1 / 131 | Yes | E | No |
| N-AT7 | 10:09pm | IA | 45 | 2.4 / 164 | Yes | D | No |
| N-AT8 | 12:42am | 37 | NA ² | 1.0 / 154 | NA ⁶ | D | NA ⁶ |

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 – 28 April 2025

| Location | Start Date and Time | MPO Only $L_{A1,1min}$ dB ^{2,4} | Criterion dB | Wind Speed m/s Direction ° | Criterion Applies ¹ | Stability Class | Exceedance dB ³ |
|----------|---------------------|--|-----------------|----------------------------|--------------------------------|-----------------|----------------------------|
| N-AT1 | 1:36am | IA | 37 | 2.2 / 179 | Yes | D | No |
| N-AT2 | 10:50pm | IA | 35 | 6.1 / 161 | Yes | D | No |
| N-AT3 | 11:25pm | IA | 40 | 5.2 / 158 | Yes | D | No |
| N-AT4 | 11:53pm | IA | 38 | 2.6 / 161 | Yes | E | No |
| N-AT5 | 12:15am | 22 | 37 | 2.7 / 159 | Yes | E | No |
| N-AT6 | 1:11am | IA | 35 | 2.5 / 163 | Yes | E | No |
| N-AT7 | 10:09pm | IA | 37 | 5.0 / 161 | Yes | D | No |
| N-AT8 | 12:42am | 33 | NA ² | 2.0 / 167 | NA ⁶ | D | NA ⁶ |

Notes:

1. 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.
2. Estimated or measured $L_{Aeq,15minute}$ attributed to MPO.
3. IA = inaudible; and
4. Bold results indicate exceedance of criteria.
5. This is not a compliance monitoring location.

Table 9-3 – $L_{Aeq, period}$ Cumulative Noise: Attended Night Monitoring – 28 April 2025

| Location | Start Date and Time | Measured Mining Only $L_{Aeq, period}$ dB ^{1,2,3} | Cumulative Noise Criterion L_{Aeq} dB | Exceedance dB |
|----------|---------------------|--|---|-----------------|
| N-AT1 | 1:36am | IA | 40 | No |
| N-AT2 | 10:50pm | IA | 40 | No |
| N-AT3 | 11:25pm | IA | 40 | No |
| N-AT4 | 11:53pm | IA | 40 | No |
| N-AT5 | 12:15am | 22 | 40 | No |
| N-AT6 | 1:11am | IA | 40 | No |
| N-AT7 | 10:09pm | IA | 40 | No |
| N-AT8 | 12:42am | 33 | NA ⁴ | NA ⁴ |

Notes:

1. 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
2. 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'.
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions.
4. 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 ten (10) blast events during April 2025 (a total of 31 blasts YTD). Results for April 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 – April 2025

| Day & Date Fired | Time Fired | BVOC Vibration (mm/s) | BVOC Overpressure (dBL) | BVO2 Vibration (mm/s) | BVO2 Overpressure (dBL) | Blast Fume Compliant |
|------------------|------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------|
| 3/04/25 | 14:58 | 0.090 mm/s | 89.9 DBL | 0.060 mm/s | 88.5 DBL | Y |
| 4/04/25 | 10:58:00 | 0.340 mm/s | 91.9 DBL | 0.440 mm/s | 92.6 DBL | Y |
| 9/04/25 | 15:03 | 0.090 mm/s | 97.2 DBL | 0.060 mm/s | 101 DBL | Y |
| 10/04/25 | 14:19 | 0.220 mm/s | 89.1 DBL | 0.450 mm/s | 95.9 DBL | Y |
| 15/04/25 | 11:40 | 0.570 mm/s | 103 DBL | 0.620 mm/s | 102 DBL | Y |
| 17/04/25 | 11:15 | 0.590 mm/s | 97.3 DBL | 0.480 mm/s | 94.8 DBL | Y |
| 24/04/25 | 14:40 | 0.730 mm/s | 101 DBL | 0.480 mm/s | 102 DBL | Y |
| 28/04/25 | 16:01 | 0.440 mm/s | 93.6 DBL | 0.540 mm/s | 89.4 DBL | Y |

END OF REPORT