

**Mount Pleasant Operation  
Monthly Environmental Monitoring Report**

**September 2022**

## 1. Introduction

The Mount Pleasant Operation (MPO) is located in the 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)* and the MPO *Development Approval (DA 92/97)*.

**Table 1-1 – Mount Pleasant Operation**

<b>Name of Operation</b>	Mount Pleasant Operation
<b>Name of Licensee</b>	MACH Energy Australia Pty Ltd
<b>Environmental Protection Licence</b>	20850
<b>Project Approval</b>	DA 92/97
<b>Reporting Period Start Date</b>	1 September 2022
<b>Reporting Period End Date</b>	30 September 2022
<b>Date All Data Received</b>	24 November 2022

Links to two key regulatory documents are provided here:

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

## 2. Monitoring Requirements

The MPO EPL 20850 specifically requires the monitoring of:

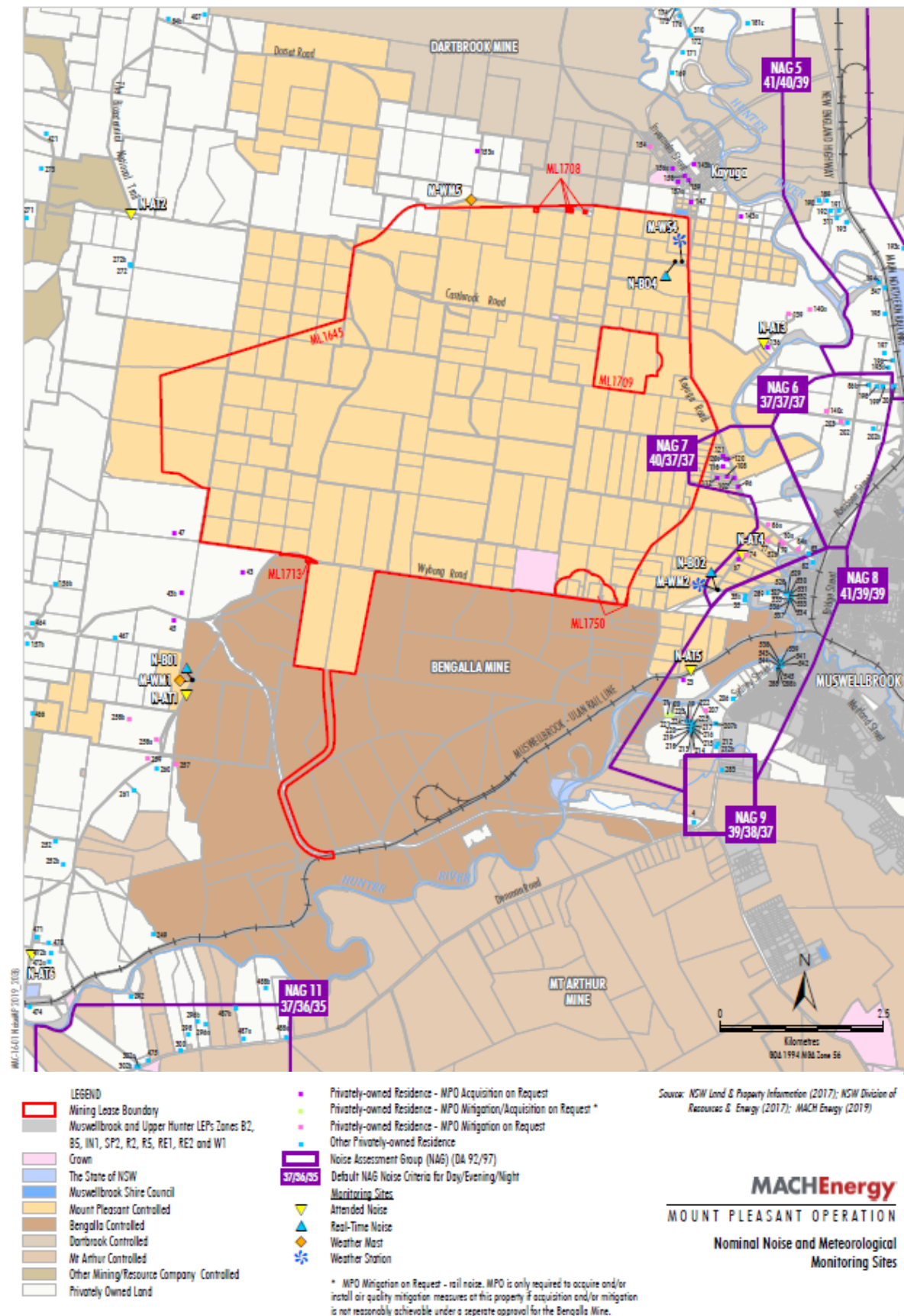
- 2 x Palas Fidas Air Quality Monitoring sites;
- Noise monitoring;
- Blast monitoring; and
- Meteorological monitoring.

Monitoring of sites not required by the EPL are carried out in accordance with *MPO Environmental Monitoring Program (EMP)* and Project Approval (DA 92/97).

All monitoring is undertaken by suitably qualified and experienced person(s).

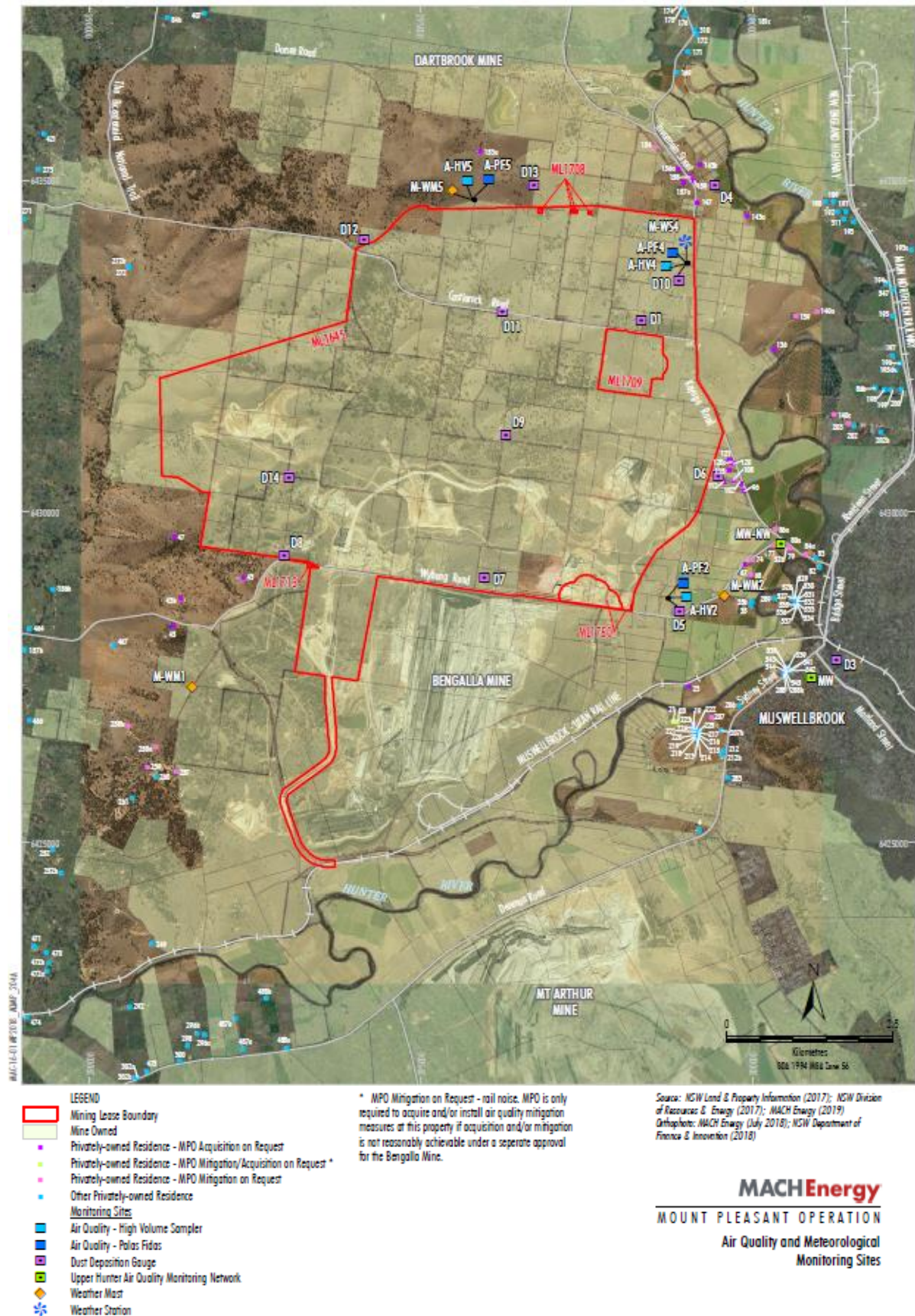
The MPO Environmental Monitoring Network is shown in the following figures:

- **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**



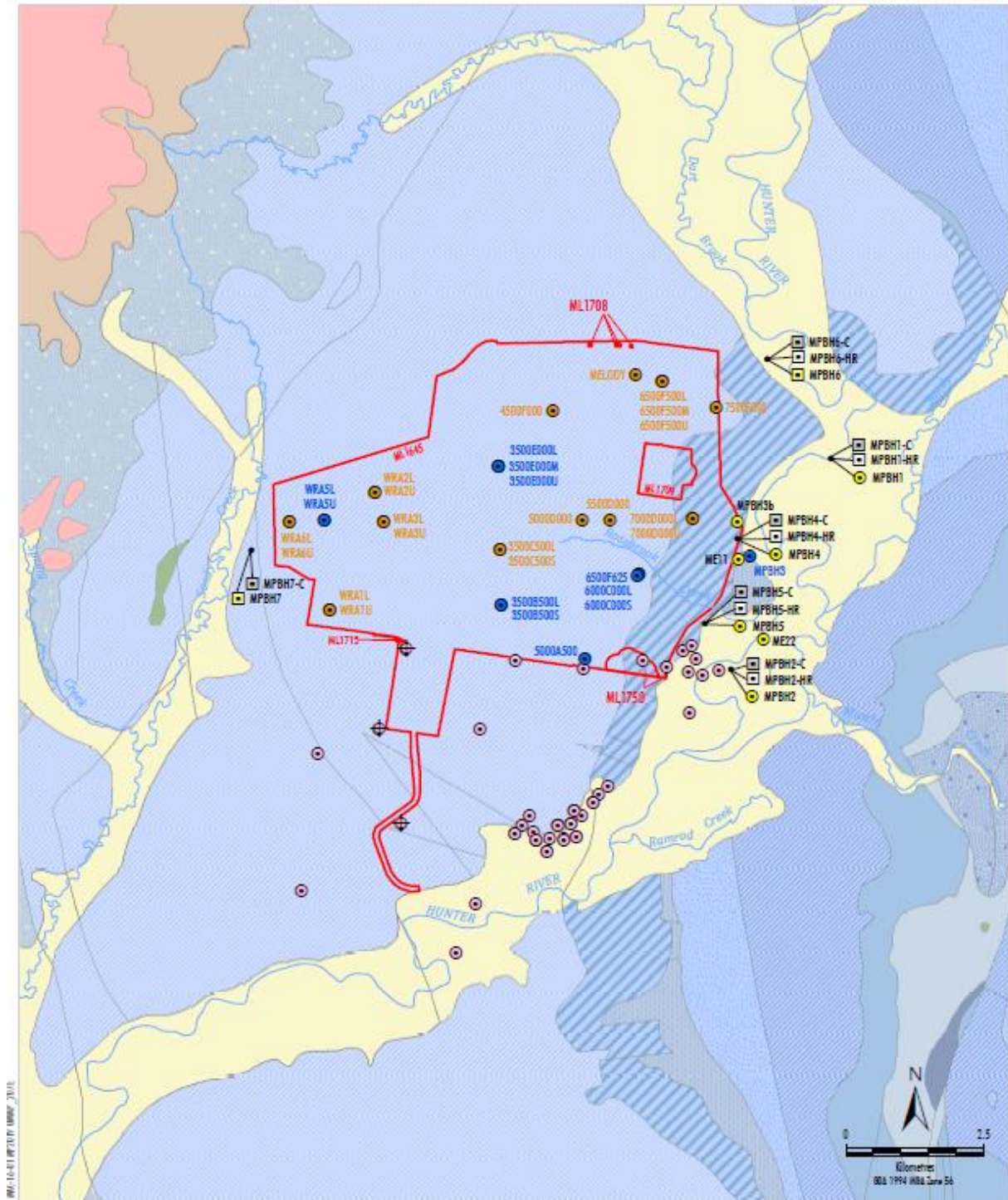


**Figure 2-2 – MPO Air Quality and Meteorological Monitoring Network**









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

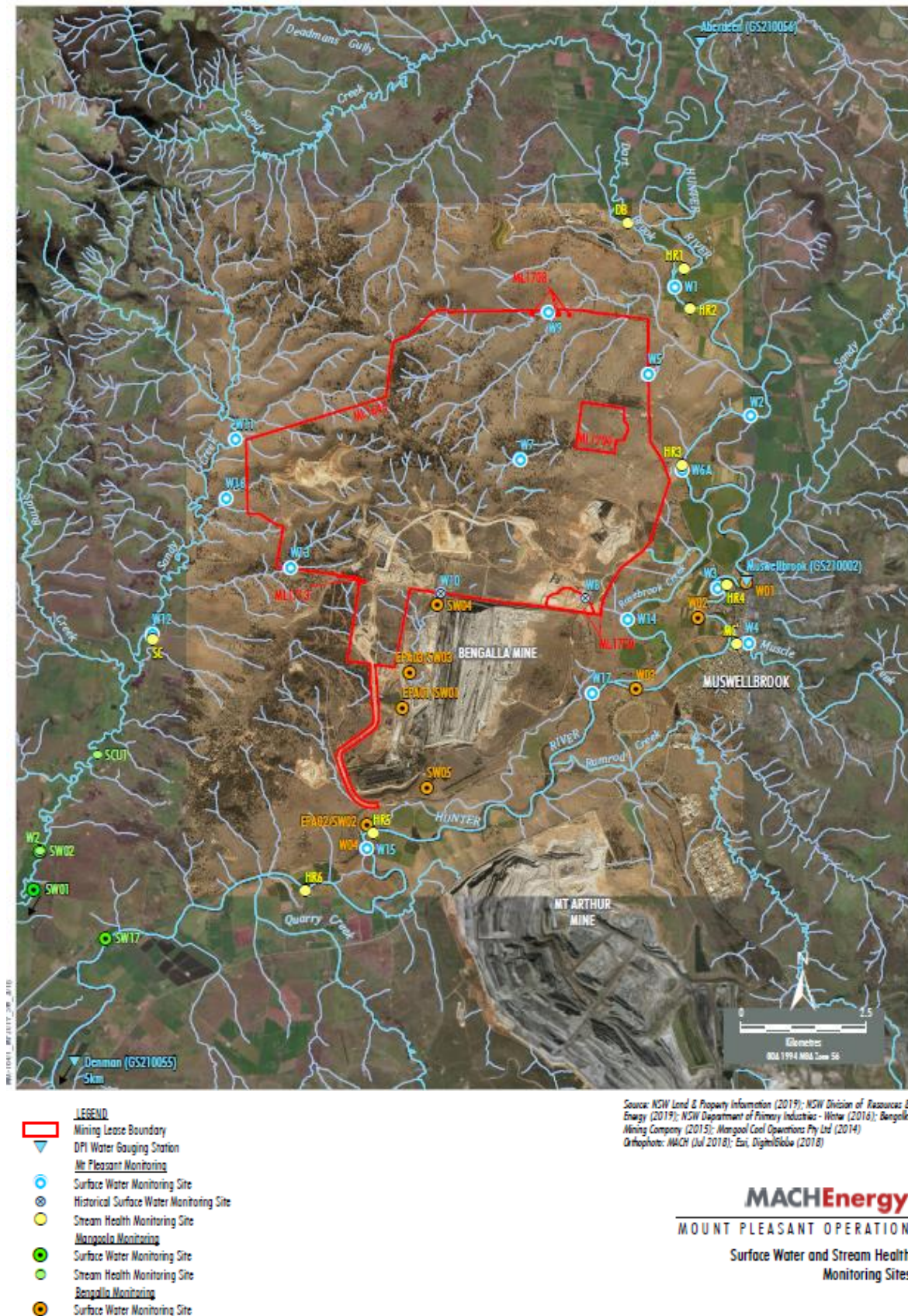
Source: NSW Land & Property Information (2019); NSW Division of Resources & Energy (2019); MACH Energy (2019)

Note: Refer Figure 3 for geology legend

**MACHEnergy**  
MOUNT PLEASANT OPERATION  
Augmentations to the  
Groundwater Monitoring Network

**Figure 2-4 – MPO Groundwater Monitoring Network**





**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 (PM<sub>10</sub> and PM<sub>2.5</sub>), the weather stations measure wind speed and direction, temperature (at 2 m and 10 m), temperature inversion (using the sigma theta method), solar radiation, relative humidity, rainfall, and atmospheric pressure.

The majority of meteorological data was captured at M-WS4 (>95.5%) during September 2022 (the monitoring period).

Throughout September 2022, there was 96.2mm and 94.8mm 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. A gauge sample is determined by AECOM 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 a high level of organic matter) and field notation that bird droppings or insects were present is likely to be considered contaminated.

#### 4.2 Results

The dust deposition exposure period for gauges commenced on 18 August 2022. Sample collection was undertaken on 16 September 2022 by AECOM with sample analysis performed by ALS, a National Association of Testing Authorities (NATA) accredited laboratory. Results are summarised in **Table 4-1**. Annual rolling averages for September 2022 have been provided as an indication of performance between September 2021 – September 2022 and does not represent annual average results for 2022 as per Schedule 3, Condition 20 of DA 92/97.



**Table 4-1: Dust Depositional Results – September 2022**

Location	YTD Insoluble Solids (g/m <sup>2</sup> .month)	Insoluble Solids Annual Rolling Average (g/m <sup>2</sup> .month)
D1	2.3	2.4
D3*	-	-
D4	1.0	1.4
D5a	2.1	2.3
D6	1.4	1.9
D7b	6.5	<b>7.0</b>
D8	3.2	3.2
D9a	2.0	1.9
D10	0.9	1.0
D11	1.7	1.7
D12	0.6	0.7
D13	1.0	1.1
D14	2.9	3.0
<i>Criterion</i>	-	<b>4</b>

**Notes:**

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

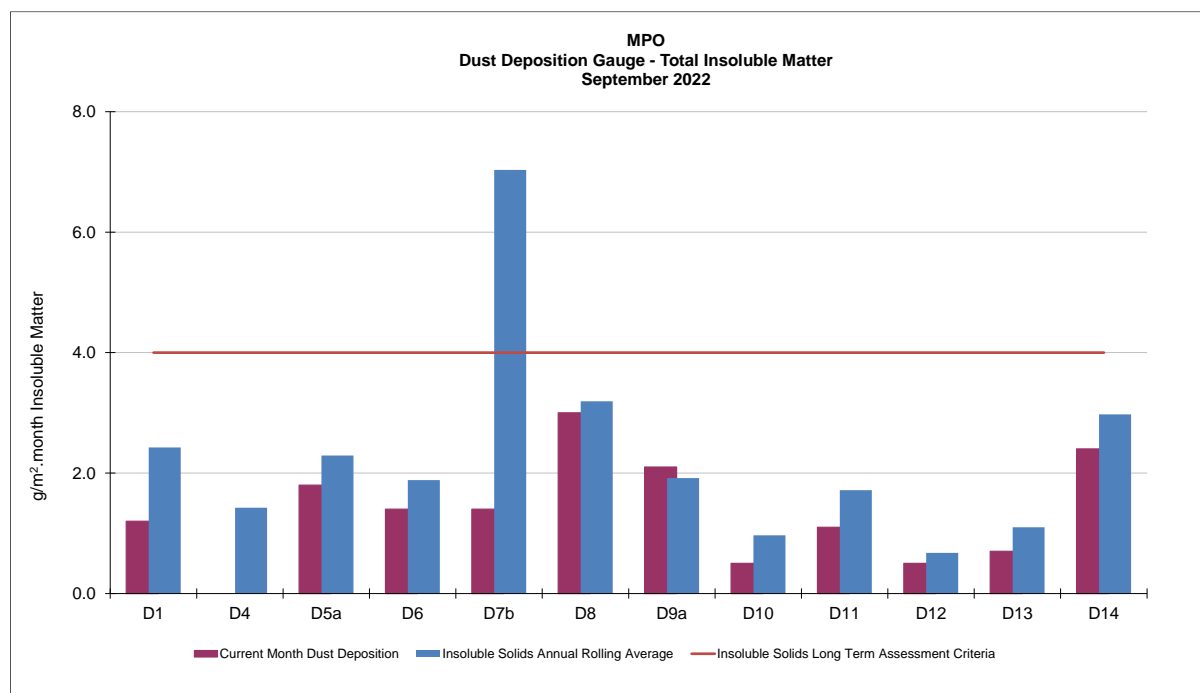
\* No longer in scope

\*\*Indicates result unavailable due to contaminated depositional dust gauges for YTD

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 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 September sampling event noted that all the gauges contained insects with two gauges also containing bird droppings. Site D4 could not be collected as the area was flooded. There was insufficient evidence of contamination in all depositional dust gauges to justify any being deemed contaminated. All September 2022 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 – September 2022**

## 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) and Project Approval DA 92/97. The DA 92/97 specifies an annual average project contribution plus background criterion of 90  $\mu\text{g}/\text{m}^3$ .



## 5.2 Results

In September 2022, 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 September 2022 have been provided as an indication of performance between September 2021 – September 2022 and do not represent annual average results for 2022 as per Schedule 3, Condition 20 of DA 92/97.

**Table 5-2 Total Suspended Particulate Monitoring Data – September 2022**

Run Date	Assessment Criterion	TSP $\mu\text{g}/\text{m}^3$		
		HVAS A-PF2	HVAS M-WS4	HVAS A-PF5
1/09/2022	-	35.4	25.8	26.4
7/09/2022	-	28.2	31.2	23.6
13/09/2022	-	57.8	36.6	28.0
19/09/2022	-	68.7	9.7	9.7
25/09/2022	-	32.0	8.3	12.1
Monthly Mean	-	44.4	22.3	20.0
<b>Annual Rolling Average</b>	90	38	29	26

Note: Results in **bold** indicate an elevated reading

## 5.3 Discussion

For the reporting period, the annual rolling average TSP data at all sites was below the annual average criterion of  $90 \mu\text{g}/\text{m}^3$ .

## 6. Real Time Air Quality Monitoring

Continuous particulate matter less than  $10 \mu\text{m}$  ( $\text{PM}_{10}$ ) and particulate matter less than  $2.5 \mu\text{m}$  ( $\text{PM}_{2.5}$ ) monitoring was conducted by three Palas Fidas units (one utilised for management only) at MPO during September 2022.

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  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  12-month rolling averages for September 2022 have been provided in Section 6.2 and 6.4 respectively, as an indication of performance between September 2021 – September 2022 and do not represent annual average results for 2022 as per Schedule 3, Condition 20 of DA 92/97.

### 6.1 $\text{PM}_{10}$ Results – 24 hour rolling average

In accordance with the DA 92/97 limit of  $50 \mu\text{g}/\text{m}^3$  for the 24 hour rolling average, there were no elevated readings measured for September 2022. Real time  $\text{PM}_{10}$  24 hour rolling average results for September 2022 are presented in **Table 6-1**.

**Table 6-1: MPO Palas Fidas PM<sub>10</sub> Data – September 2022**

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2	Muswellbrook NW	Muswellbrook NW 24 Hour Average Limit (µg/m³)	A-PF2, A-PF4, A-PF5 24 Hour Average Limit (µg/m³)
	24 hour Average Result					
1/09/2022	18	13	-	7.3	44	50
2/09/2022	11	9	-	17.3	44	50
3/09/2022	9	8	-	14.9	44	50
4/09/2022	9	11	-	15.6	44	50
5/09/2022	10	10	-	13.7	44	50
6/09/2022	13	12	-	14.3	44	50
7/09/2022	13	11	-	15.1	44	50
8/09/2022	15	12	-	14.1	44	50
9/09/2022	13	14	-	15.2	44	50
10/09/2022	11	5	-	22.5	44	50
11/09/2022	12	7	-	18.3	44	50
12/09/2022	16	7	-	15.4	44	50
13/09/2022	14	10	-	18.6	44	50
14/09/2022	12	11	-	15.6	44	50
15/09/2022	14	13	-	16.1	44	50
16/09/2022	11	6	-	16.9	44	50
17/09/2022	14	8	-	15	44	50
18/09/2022	15	6	-	19.4	44	50
19/09/2022	16	7	-	15.6	44	50
20/09/2022	12	10	-	29.3	44	50
21/09/2022	17	14	-	32.3	44	50
22/09/2022	8	9	-	26.8	44	50
23/09/2022	10	9	-	22.6	44	50
24/09/2022	12	9	-	18.4	44	50
25/09/2022	11	8	-	20.5	44	50
26/09/2022	16	13	-	21.4	44	50
27/09/2022	13	12	-	27.6	44	50
28/09/2022	15	7	-	22.5	44	50
29/09/2022	8	8	-	24.7	44	50
30/09/2022	11	11	-	19	44	50

**Notes:**

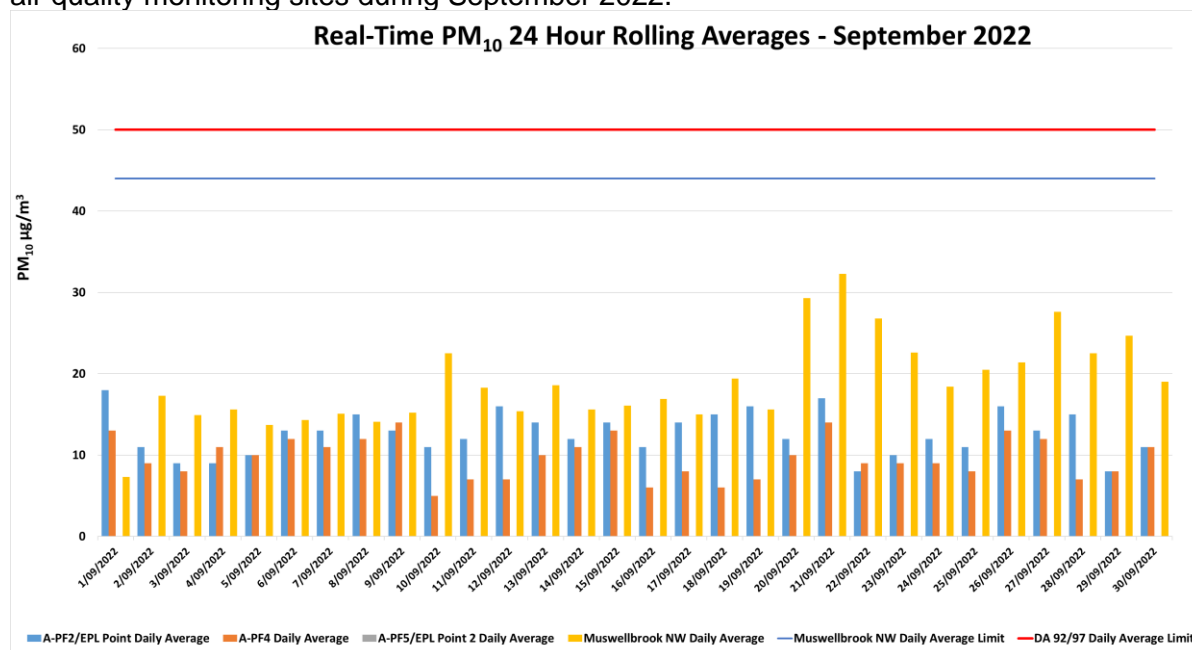
Results in bold indicate elevated readings during adverse weather conditions.

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

- Data capture affected by technical issue and equipment malfunction



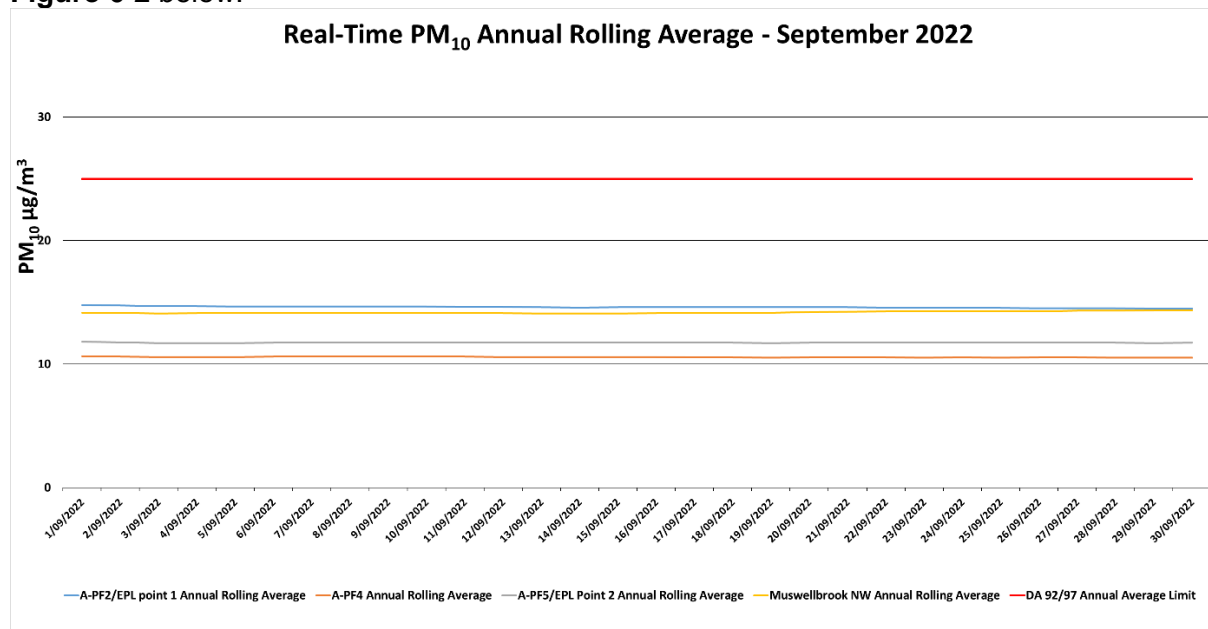
**Figure 6-1** below shows the results of real-time PM<sub>10</sub> 24 hour rolling average results at MPO air quality monitoring sites during September 2022.



**Figure 6-1: Real-time PM<sub>10</sub> 24 hour rolling average results for September 2022.**

## 6.2 PM<sub>10</sub> Results – Annual rolling average

There were no elevated PM<sub>10</sub> measurements reported at MPO for the September 2022 annual rolling average. Real time PM<sub>10</sub> annual rolling averages for September 2022 are presented in **Figure 6-2** below.



**Figure 6-2: Real-time PM<sub>10</sub> Annual Rolling average results for September 2022.**

## 6.3 PM<sub>2.5</sub> Results – 24 hour rolling average

There were no elevated PM<sub>2.5</sub> measurements reported throughout September 2022. Real time PM<sub>2.5</sub> 24 hour rolling average results for September 2022 are presented in **Table 6-2**.

**Table 6-2: MPO Palas Fidas PM<sub>2.5</sub> Data – September 2022**

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			
1/09/2022	8	7	-	25
2/09/2022	5	4	-	25
3/09/2022	4	4	-	25
4/09/2022	4	4	-	25
5/09/2022	4	4	-	25
6/09/2022	4	4	-	25
7/09/2022	5	5	-	25
8/09/2022	5	4	-	25
9/09/2022	4	4	-	25
10/09/2022	3	2	-	25
11/09/2022	4	3	-	25
12/09/2022	4	3	-	25
13/09/2022	4	3	-	25
14/09/2022	5	4	-	25
15/09/2022	6	6	-	25
16/09/2022	3	3	-	25
17/09/2022	4	3	-	25
18/09/2022	4	3	-	25
19/09/2022	4	3	-	25
20/09/2022	4	4	-	25
21/09/2022	6	5	-	25
22/09/2022	4	4	-	25
23/09/2022	4	4	-	25
24/09/2022	4	4	-	25
25/09/2022	4	3	-	25
26/09/2022	4	4	-	25
27/09/2022	4	4	-	25
28/09/2022	4	3	-	25
29/09/2022	3	3	-	25
30/09/2022	4	4	-	25

**Notes:**

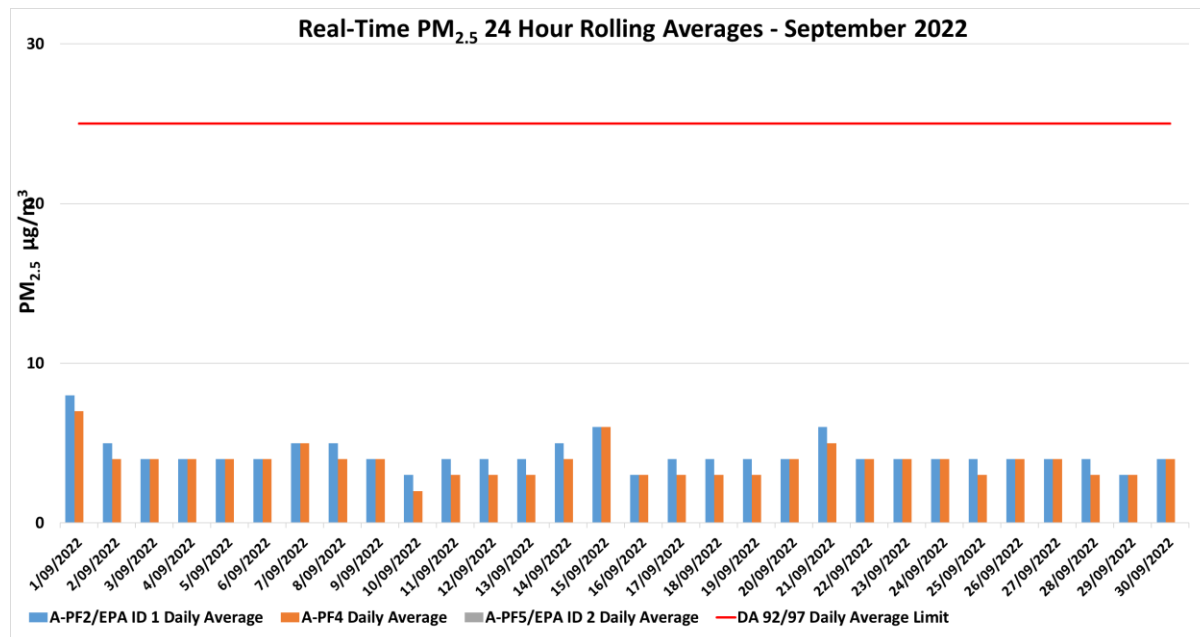
Results in **bold** indicate elevated readings during adverse weather conditions.

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

- Data capture affected by technical issue and equipment malfunction



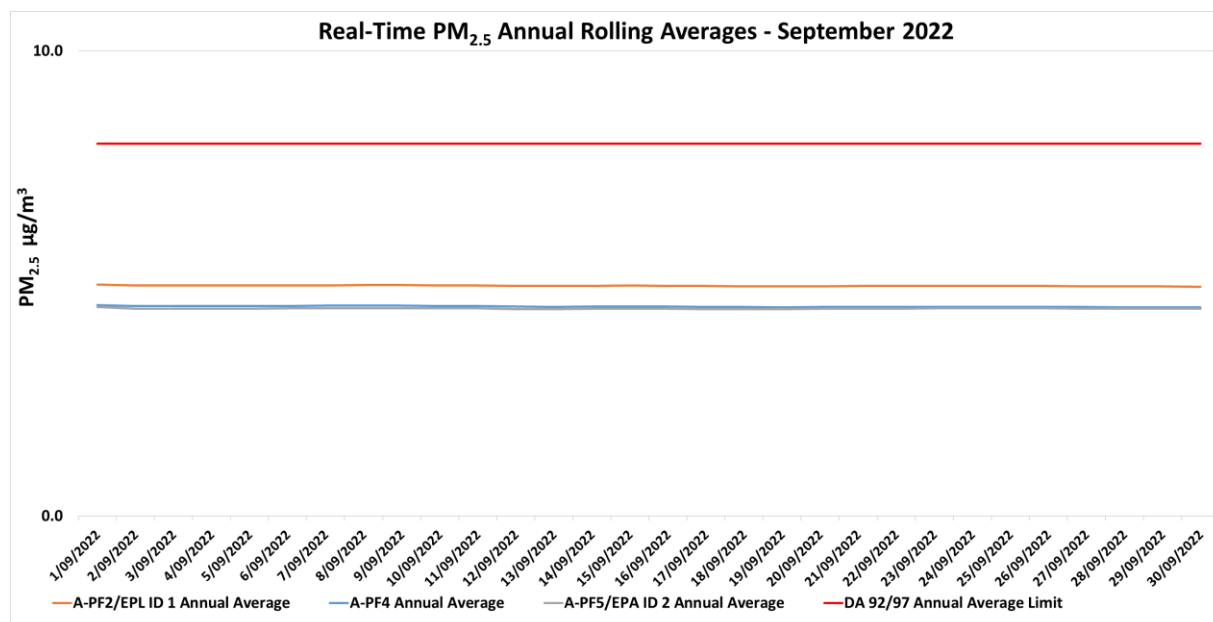
Real time PM<sub>2.5</sub> 24 hour average results for September 2022 are presented in **Figure 6-3** below.



**Figure 6-3: Real-time PM<sub>2.5</sub> 24 hour rolling average results for September 2022.**

## 6.4 PM<sub>2.5</sub> Results - Annual rolling average

There were no elevated PM<sub>2.5</sub> measurements reported at MPO for the September 2022 annual rolling average. Real time PM<sub>2.5</sub> annual rolling averages for September 2022 are presented in **Figure 6-4** below.



**Figure 6-4: Real-time PM<sub>2.5</sub> Annual Rolling average results for September 2022.**

## 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, 2019) in accordance with site specific trigger values that have been developed using the Australian and New Zealand Environment and Conservation Council (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 event monitoring was conducted by AECOM on 16 September 2022. Additional rain event monitoring occurred on 23 September 2022. 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** and **Table 7-2**.

**Table 7-1 – MPO Monthly Surface Water Monitoring Results – 16 September 2022**

Station	pH	Electrical Conductivity (EC) (µs/cm) <sup>1</sup>	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
W1	8.2	470	292	88
W2	^	^	^	^
W3	8.0	440	280	106
W4	7.6	200	112**	113
W5	7.2	70	40**	12
W6A	8.0	<b>530</b>	303	<b>81</b>
W9	7.5	150	85**	24
W11	^	^	^	^
W12	7.9	390	329	315
W13	^	^	^	^
W14	*	*	*	*
W15	8.2	820	445	63
W16	^	^	^	^
W17	8.0	600	360	<b>150</b>

Notes:

Results in **bold** indicate elevated reading of adopted assessment criteria.

\*Dry or insufficient water to sample.

^ Indicates no safe access due to wet weather conditions

\*\* Calculated result due to interference from fine colloidal material

<sup>1</sup> Results have been rounded in accordance with the In-house method Q4AN(EV)-332-WI3 (pH) and In-house method Q4AN(EV)-332-WI2 (EC).

**Table 7-2 – MPO Rain Event Surface Water Monitoring Results – 23 September 2022**

Station	pH	Electrical Conductivity (EC) (µs/cm) <sup>1</sup>	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
W1	8.1	350	217	126
W2	^	^	^	^
W3	8.0	320	216	156
W4	7.6	370	270	37
W5	*	*	*	*
W6A	7.9	320	214	<b>636</b>
W9	7.5	<b>450</b>	257**	45
W11	^	^	^	^
W12	8.1	780	482	49
W13	^	^	^	^
W14	*	*	*	*
W15	7.5	320	259	89
W16	^	^	^	^
W17	^	^	^	^

Notes:

Results in **bold** indicate elevated reading of adopted assessment criteria.

\*Dry or insufficient water to sample.

^ Indicates no safe access due to wet weather conditions

\*\* Calculated result due to interference from fine colloidal material

<sup>1</sup> Results have been rounded in accordance with the In-house method Q4AN(EV)-332-WI3 (pH) and In-house method Q4AN(EV)-332-WI2 (EC).

During the September monthly monitoring, one of the fifteen monitoring location were found to have insufficient water to sample. Four sites were unable to be accessed due to wet conditions. Sites W6A exceeded their respective EC and pH levels and W17 exceeded respective TSS limits.

During the September rain event monitoring, two of the fifteen monitoring location were found to have insufficient water to sample. Five sites were unable to be accessed due to wet conditions. Sites W6A and W9 exceeded individual TSS and EC limits respectively.

All other sites were within or below their respective trigger levels between the two events. An investigation will be triggered if elevated measurements occur for three consecutive sampling events in accordance MPO Water Management Plan (MACH Energy, 2019). All other sites were below or inside the assessment trigger ranges.

## 8. Groundwater Monitoring

Quarterly groundwater monitoring was not undertaken in September. The next quarterly monitoring event is scheduled for November 2022.



## 9. Noise Monitoring

Attended noise monitoring was undertaken during the night period of 7/8 September 2022 at 6 monitoring locations as per the MPO *Noise Management Plan* (MACH Energy, 2021) in accordance with DA 92/97 and EPL 20850.

### 9.1 Results

The results for night time attended noise monitoring for noise generated by MPO in September 2022 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 – 7/8 September 2022**

Location	Start Date and Time	Wind Speed m/s	Stability Class	Criterion dB	Criterion Applies <sup>1</sup>	MPO Only $L_{A1,1min}$ dB <sup>2,4,8</sup>	Exceedance dB <sup>3,4</sup>
N-AT1	7/09/2022 23:39	1.1	D	45	Yes	IA	Nil
N-AT2	7/09/2022 22:00	1.3	D	45	Yes	IA	Nil
N-AT3	7/09/2022 22:30	2.6	F	45	No	IA	NA
N-AT4	7/09/2022 22:55	1	D	45	Yes	IA	Nil
N-AT5	7/09/2022 23:17	1	D	45	Yes	IA	Nil
N-AT6	7/09/2022 23:14	1	D	45	Yes	IA	Nil

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; and
- NA in exceedance column means meteorological conditions outside those specified in Condition L2.3 of EPL 20850 and thus criterion is not applicable;
- NM Not Measurable. Some noise was audible but could not be quantified;
- Bold results indicate exceedance of criteria; and
- Remeasure
- IA - Inaudible. When site noise is noted as IA then there was no site noise at the monitoring location.

**Table 9-2 –  $L_{Aeq,15min}$  Generated by MPO: Attended Night Monitoring – 7/8 September 2022**

Location	Start Date and Time	Wind Speed m/s	Stability Class	Criterion dB	Criterion Applies <sup>1</sup>	MPO Only $L_{Aeq}$ dB <sup>2,4,7</sup>	Exceedance dB <sup>3,4</sup>
N-AT1	7/09/2022 23:39	1.1	D	43	Yes	IA	Nil
N-AT2	7/09/2022 22:00	1.3	D	36	Yes	IA	Nil
N-AT3	7/09/2022 22:30	2.6	F	41	No	IA	NA
N-AT4	7/09/2022 22:55	1	D	42	Yes	IA	Nil
N-AT5	7/09/2022 23:17	1	D	40	Yes	IA	Nil
N-AT6	7/09/2022 23:14	1	D	35	Yes	IA	Nil

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;
- NM Not Measurable. Some noise was audible but could not be quantified;
- Bold results indicate exceedance of criteria; and
- Remeasure
- IA - Inaudible. When site noise is noted as IA then there was no site noise at the monitoring location.

**Table 9-3 –  $L_{Aeq,period}$  Cumulative Noise: Attended Night Monitoring – 7/8 September 2022**

Location	Start Date and Time	Cumulative Noise Criterion $L_{Aeq}$ dB	Measured Mining Only $L_{Aeq,period}$ dB <sup>1,2</sup>	Exceedance dB
N-AT1	7/09/2022 23:39	40	Nil	Nil
N-AT2	7/09/2022 22:00	40	Nil	Nil
N-AT3	7/09/2022 22:30	40	Nil	Nil
N-AT4	7/09/2022 22:55	40	Nil	Nil
N-AT5	7/09/2022 23:17	40	Nil	Nil
N-AT6	7/09/2022 23:14	40	Nil	Nil

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'.

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). Noise levels from MPO complied with noise limits at all monitoring locations during the monitoring period.

## 10. Blast Monitoring

There were 8 blast events during September (a total of 65 blasts YTD). Results for September 2022 are presented in **Table 10-1**. All blast results during the September 2022 monitoring period were below the criteria in Schedule 3, Condition 10 of DA 92/97. One blast exceeded overpressure limits required by the *EPL20850* on 2 September 2022.

**Table 10-1 – MPO Blast Monitoring Results – September 2022**

Day & Date Fired	Time Fired	Vibration (mm/s) BVOA	Overpressure (dBL) BVOA	Vibration (mm/s) BVOC	Overpressure (dBL) BVOC	Vibration (mm/s) BVO2	Overpressure (dBL) BVO2	Blast Fume Compliant
2/09/2022 Friday	9:08	0.460	122.7	0.410	110.9	0.360	10.7	Y
8/09/2022 Thursday	13:19	0.450	97.9	0.330	95.5	0.340	94.8	Y
13/09/2022 Tuesday	13:06	0.510	94.3	0.230	86.9	0.330	94.5	Y
14/09/2022 Wednesday	13:09	1.180	112.7	1.560	102.3	0.680	97.4	Y
16/09/2022 Friday	12:12	1.320	106	0.900	108.8	0.420	107.2	Y
20/09/2022 Tuesday	13:16	0.540	105.9	0.300	99.2	0.370	94.6	Y
23/09/2022 Friday	12:03	1.530	104.9	0.750	98.4	0.450	98.4	Y
29/09/2022 Thursday	15:00	0.450	93	0.260	88.6	0.470	90.1	Y

**END OF REPORT**