

**Mount Pleasant Operation
Monthly Environmental Monitoring Report**

July 2019

Table of Contents

1. Introduction	2
2. Monitoring Requirements	2
3. Dust Depositional Monitoring	7
3.1 Methodology.....	7
3.2 Results.....	7
4. Total Suspended Particulates	9
4.1 Assessment Criteria.....	9
4.2 Results.....	10
4.3 Discussion.....	10
5. Real Time PM₁₀ Monitoring	10
5.1 PM ₁₀ Results – 24 hour rolling average.....	10
5.2 PM ₁₀ Results – Annual rolling average.....	12
5.3 PM _{2.5} Results – 24 hour rolling average.....	13
5.4 PM _{2.5} Results - Annual rolling average.....	13
6. Surface Water Monitoring	14
6.1 Methodology.....	14
6.2 Assessment Criteria.....	14
6.3 Results.....	14
7. Groundwater Monitoring	15
8. Noise Monitoring	15
8.1 Results.....	15
9. Blast Monitoring	16
10. Meteorological Monitoring	18

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

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 July 2019
Reporting Period End Date	31 July 2019
Date Data Received	21 August 2019

To view MPO EPL 20850 or DA 92/97 in full please refer to the link below.

<https://machenergyaustralia.com.au/mount-pleasant/documentation/>

2. Monitoring Requirements

The MPO EPL 20850 specifically requires the monitoring of:

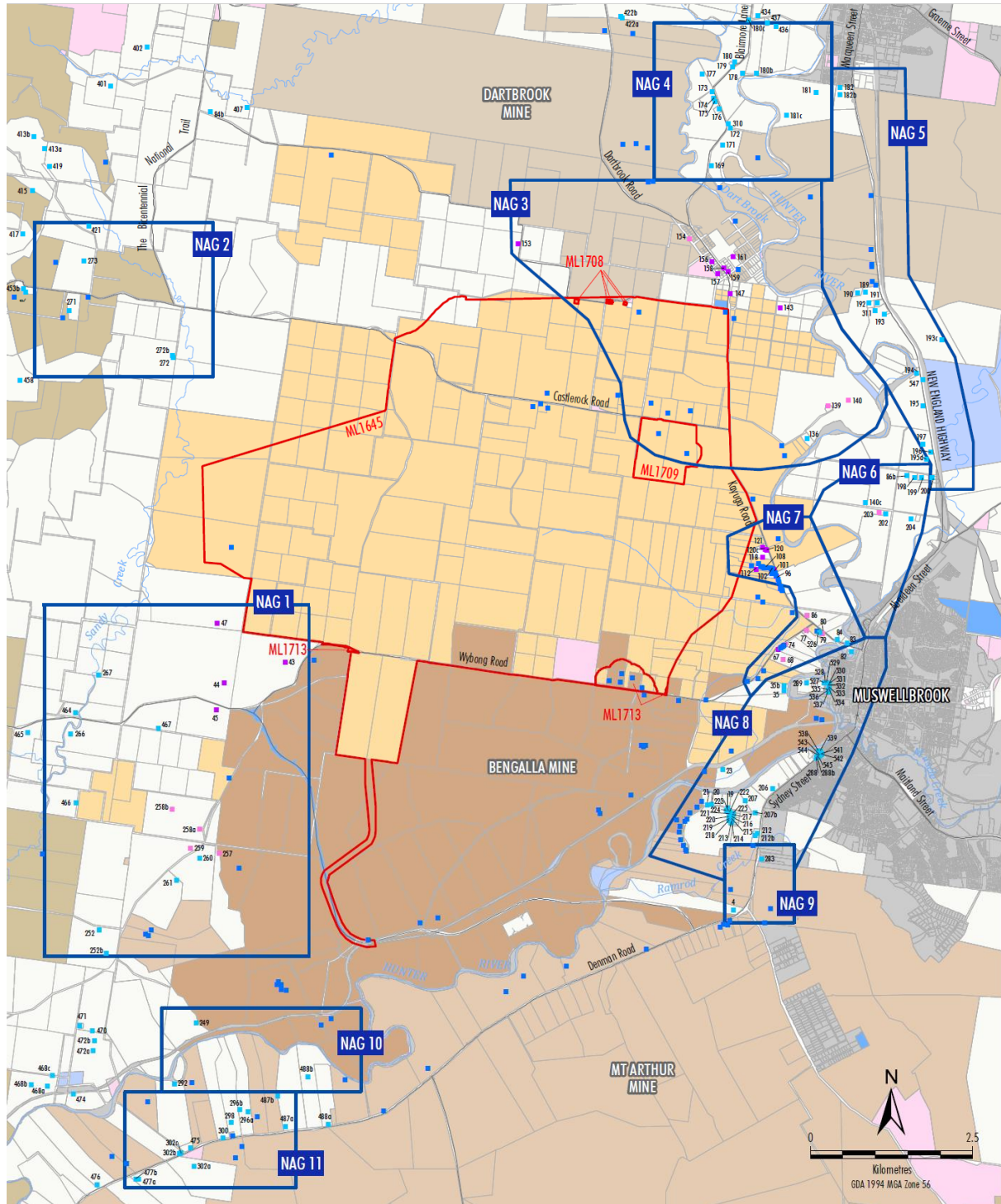
- 2 x Palas Fidas sites;
- Noise monitoring;
- Blast monitoring; and
- Meteorological monitoring.

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 suitability qualified and experienced person(s).

The MPO Environmental Monitoring Network is shown in **Figure 2-1, Figure 2-2, Figure 2-3 and Figure 2-4.**

Figure 2-1 shows MPO attended noise monitoring assessment groups. **Figure 2-2** shows the MPO air quality monitoring network. **Figure 2-3** shows the MPO ground water monitoring network. **Figure 2-4** shows the MPO surface water monitoring network.



- LEGEND**
- Mining Lease Boundary
 - Mine-owned Dwelling
 - Privately-owned Residence - MPO Acquisition on Request
 - Privately-owned Residence - MPO Mitigation on Request
 - Other Privately-owned Residence
 - Noise Assessment Group (NAG) (DA 92/97)

- 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

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

MACHEnergy
MOUNT PLEASANT OPERATION
Relevant Sensitive Receivers
and Noise Assessment Groups

Figure 2-1 – MPO Attended Noise Monitoring Assessment Groups

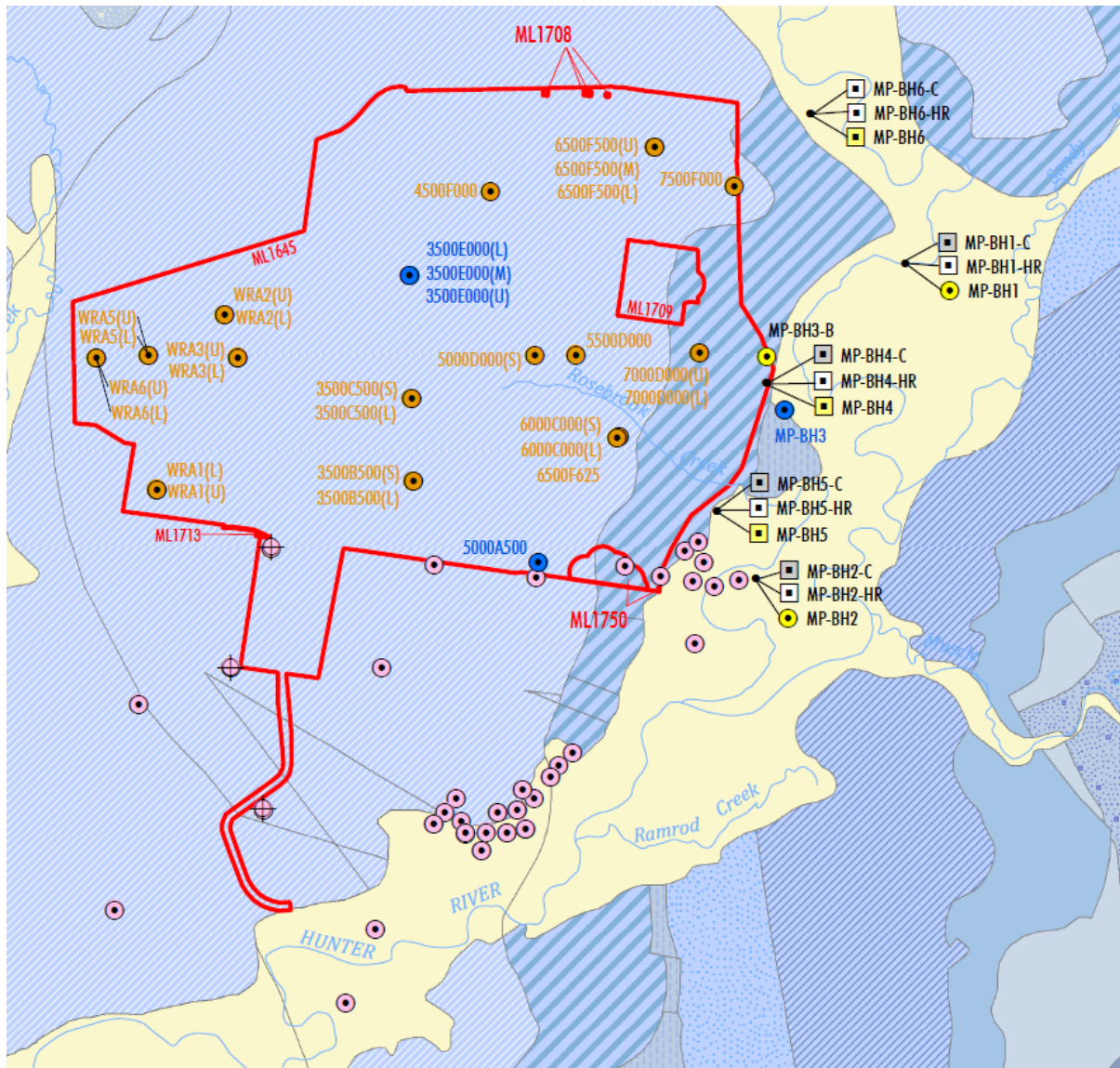


- LEGEND**
- Mining Lease Boundary
 - Mine Owned
 - Privately-owned Residence - MPO Acquisition on Request
 - Privately-owned Residence - MPO Mitigation on Request
 - Other Privately-owned Residence
 - Monitoring Sites**
 - Air Quality - High Volume Sampler
 - Air Quality - Palas Fidas
 - Dust Deposition Gauge
 - Upper Hunter Air Quality Monitoring Network
 - ◆ Weather Mast
 - ✱ Weather Station

Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); MACH Energy (2017)
 Orthophoto: MACH Energy (Aug 2016)

MACH Energy
 MOUNT PLEASANT OPERATION
 Air Quality and Meteorological
 Monitoring Sites

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



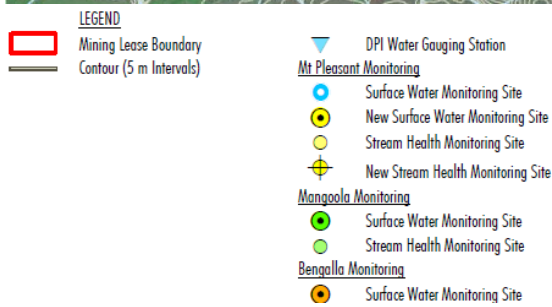
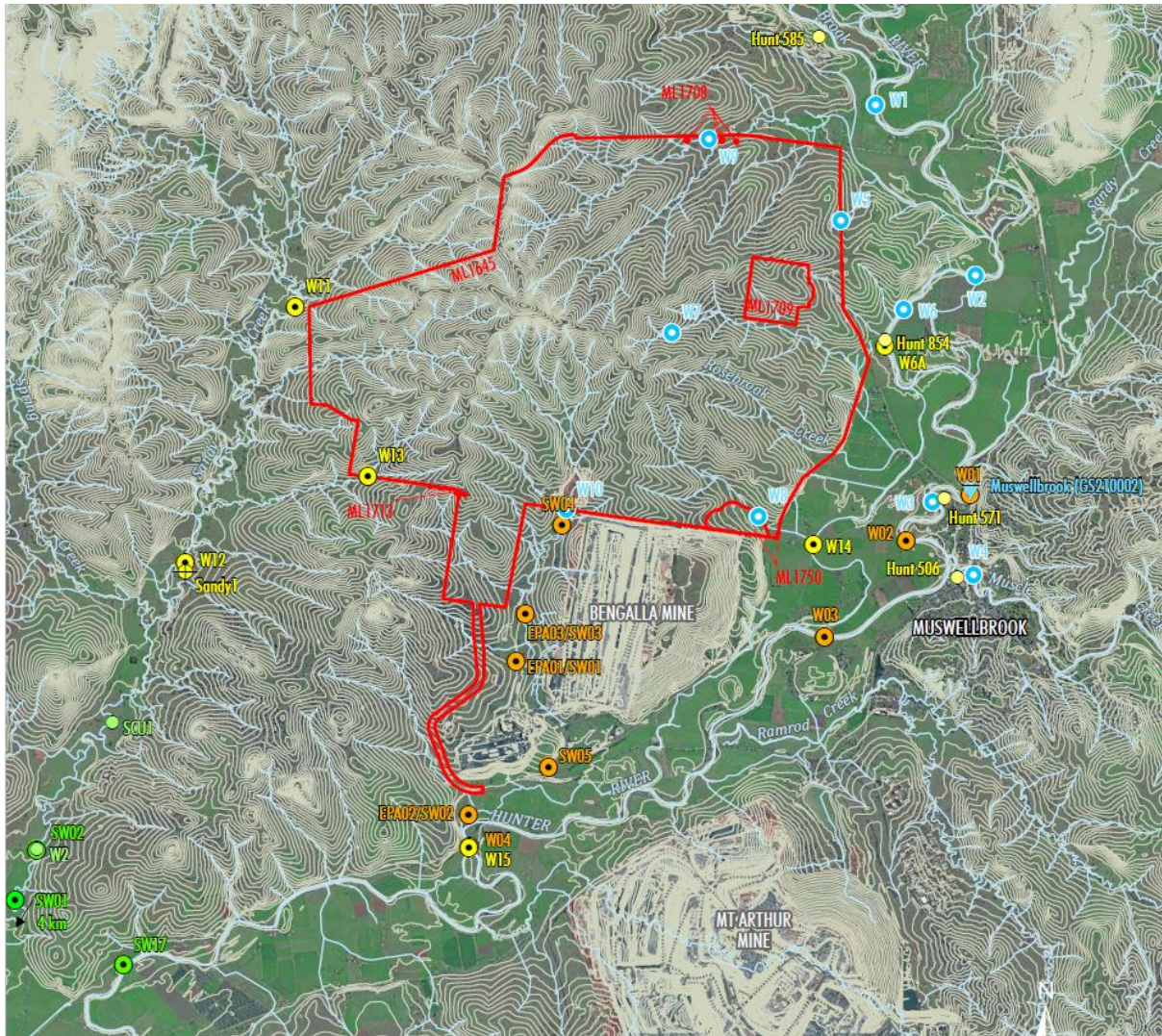
- LEGEND**
- Mining Lease Boundary
 - Mount Pleasant Monitoring
 - Standpipe
 - Standpipe - Alluvium
 - Standpipe - Historical
 - Planned Mount Pleasant Monitoring
 - Standpipe - Coal Seam
 - Standpipe - Interburden
 - Standpipe - Alluvium
 - Bengalla Monitoring
 - Standpipe
 - ⊕ Vibrating Wire Piezometer

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

Note: Refer Figure 3 for geology legend

MACHEnergy
MOUNT PLEASANT OPERATION
Augmentations to the
Groundwater Monitoring Network

Figure 2-3 – MPO Groundwater Monitoring Network



Source: NSW Land & Property Information (2017); NSW Division of Resources & Energy (2017); NSW Department of Primary Industries - Water (2016); Bengalla Mining Company (2015); Mangoola Coal Operations Pty Ltd (2014)

MACHEnergy
 MOUNT PLEASANT OPERATION
 Surface Water Monitoring

Figure 2-4 – MPO Surface Water Monitoring Network

3. Dust Depositional Monitoring

3.1 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.

3.2 Results

The dust deposition exposure period for all gauges commenced on 17 June 2019. Sample collection was undertaken on 17 July 2019 by AECOM with sample analysis performed by SRT, a NATA accredited laboratory. Results are summarised in **Table 3-1**.

Table 3-1: Dust Depositional Results – July 2019

Location	YTD Insoluble Solids (g/m ² .month)	Insoluble Solids Annual Rolling Average (g/m ² .month)
D1	2.1	2.0
D3	3.4	3.3
D4	2.4	2.3
D5	3.1	2.9
D6	3.8	3.4
D7 ¹	8.4	7.8
D8	4.9	4.4
D9	4.6	3.2

Location	YTD Insoluble Solids (g/m ² .month)	Insoluble Solids Annual Rolling Average (g/m ² .month)
D10	1.5	1.6
D11	3.0	2.7
D12	1.3	1.7
D13	2.4	2.9
D14	3.8	4.2
Criterion	-	4
<p><i>Note: Results in bold indicate an elevated measurement of adopted assessment criteria</i> <i>**Indicates result unavailable due to contaminated depositional dust gauges for YTD</i></p>		

Note ¹: Site D7 is located within close proximity to the northern boundary of a neighbouring mining company's main pit and thus is heavily influenced by this. This site will continue to be monitored, however will not be used to assess compliance or to represent residential receivers in the area.

Contaminated results are not included in the 12 month rolling average. An elevated reading above the annual average criterion for dust deposition (insoluble solids) was recorded at site D7a (7.8 g/m².month), D8 (4.4 g/m².month), and D14 (4.2 g/m².month).

Site D7 is located within close proximity to the northern boundary of a neighbouring mining operation and thus can be influenced by this site. D7 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. While 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 July sampling event noted that all the gauges contained insects and 9 contained bird droppings.

Figure 3-1 compares the monthly insoluble solids results to the annual averages for each dust gauge and the assessment criterion.

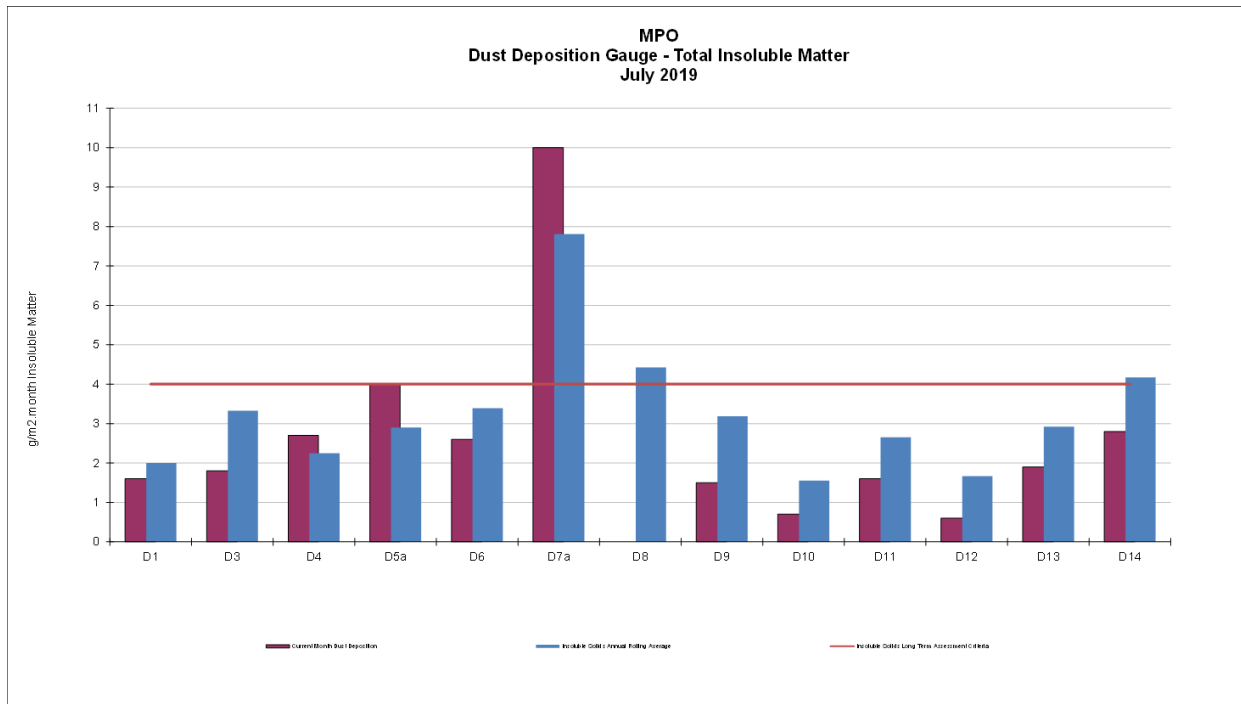


Figure 3-1: MPO Dust Deposition Monthly Result and Annual Rolling Average – July 2019

4. 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 4-1** below. These units were commissioned in March 2017.

Table 4-1 Total suspended Particulate Monitoring Sites

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

4.1 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 criterion of 90 $\mu\text{g}/\text{m}^3$.

4.2 Results

In July 2019 sample collection was undertaken by AECOM with sample analysis performed by SRT, a NATA accredited laboratory. TSP results for the monitoring period are provided in **Table 4-2**.

Table 4-2 Total Suspended Particulate Monitoring Data – July 2019

Run Date	Assessment Criterion	TSP $\mu\text{g}/\text{m}^3$		
		HVAS A-PF2	HVAS M-WS4	HVAS A-PF5
01/07/2019	-	107	90	75
07/07/2019	-	36	31	40
13/07/2019	-	92	15	25
19/07/2019	-	64	21	15
25/07/2019	-	72	43	55
31/7/2019	-	76	54	54
Monthly Mean	-	75	42	44
Annual Rolling Average	90	87	48	49

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

4.3 Discussion

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

5. Real Time PM_{10} Monitoring

Continuous particulate matter less than $10 \mu\text{m}$ (PM_{10}) and particulate matter less than $2.5 \mu\text{m}$ ($\text{PM}_{2.5}$) monitoring was conducted by three Palas Fidas (one utilised for management only) units at MPO during July 2019.

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.

5.1 PM_{10} Results – 24 hour rolling average

During the July 2019 monitoring period there were no elevated readings measured in accordance with the DA 92/97 limit of $50 \mu\text{g}/\text{m}^3$ for the 24 hour rolling average nor were there elevated readings measured at the Muswellbrook NW monitor in accordance with EPL 20850 for 'adverse dust conditions' ($44 \mu\text{g}/\text{m}^3$) for the 24 hour rolling average. The Muswellbrook NW monitor was operational during all days of July 2019.

Real time PM_{10} 24 hour rolling average results for July 2019 are presented in **Figure 5-1** below.

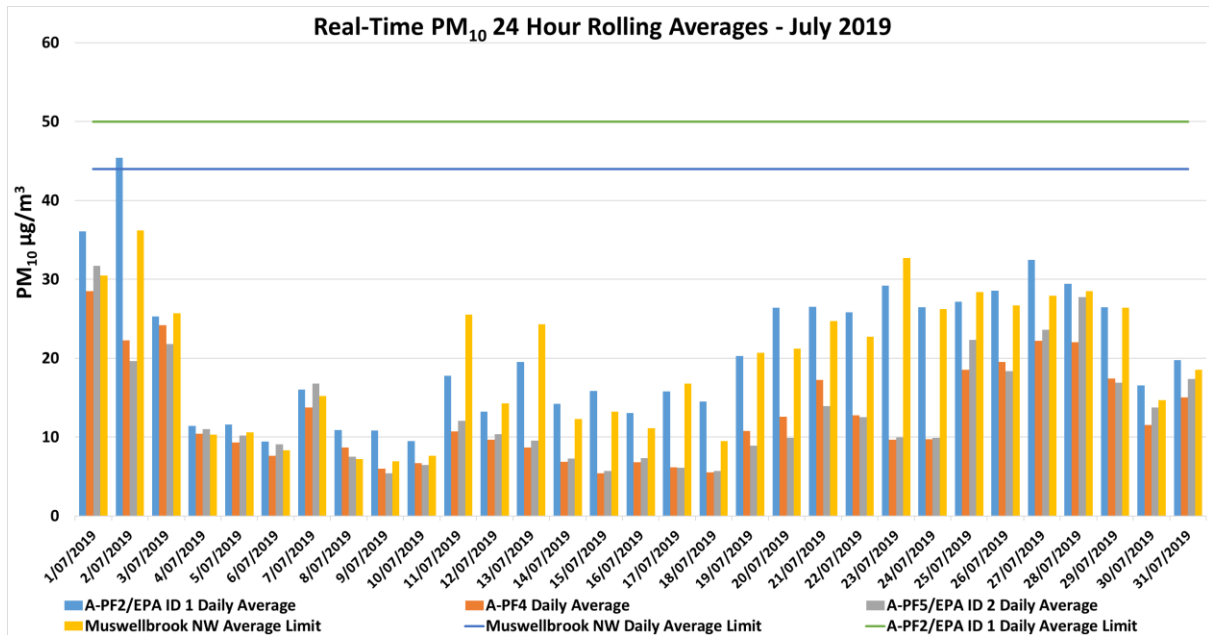


Figure 5-1: Real-time PM₁₀ 24 hour rolling average results for July 2019.

Figure 5-1 shows the results of real-time PM₁₀ 24 hour rolling average results at MPO air quality monitoring sites for July 2019.

Real time PM₁₀ 24 hour rolling average results for July 2019 are presented in **Table 5- 1**.

Table 5-1: MPO Palas Fidas PM₁₀ Data – July 2019

Date	A-PF2/EPA ID 1	A-PF4	A-PF5/EPA ID 2	Muswellbrook NW	A-PF2 24 Hour Average Limit (µg/m ³)	Muswellbrook NW 24 Hour Average Limit (µg/m ³)
	24 hour Average Result					
1/07/2019	36	28	32	31	50	44
2/07/2019	45	22	20	36	50	44
3/07/2019	25	24	22	26	50	44
4/07/2019	11	10	11	10	50	44
5/07/2019	12	9	10	11	50	44
6/07/2019	9	8	9	8	50	44
7/07/2019	16	14	17	15	50	44
8/07/2019	11	9	8	7	50	44
9/07/2019	11	6	5	7	50	44
10/07/2019	10	7	6	8	50	44
11/07/2019	18	11	12	26	50	44
12/07/2019	13	10	10	14	50	44
13/07/2019	20	9	10	24	50	44
14/07/2019	14	7	7	12	50	44
15/07/2019	16	5	6	13	50	44
16/07/2019	13	7	7	11	50	44
17/07/2019	16	6	6	17	50	44

18/07/2019	15	6	6	10	50	44
19/07/2019	20	11	9	21	50	44
20/07/2019	26	13	10	21	50	44
21/07/2019	27	17	14	25	50	44
22/07/2019	26	13	13	23	50	44
23/07/2019	29	10	10	33	50	44
24/07/2019	26	10	10	26	50	44
25/07/2019	27	19	22	28	50	44
26/07/2019	29	20	18	27	50	44
27/07/2019	32	22	24	28	50	44
28/07/2019	29	22	28	29	50	44
29/07/2019	26	17	17	26	50	44
30/07/2019	17	12	14	15	50	44
31/07/2019	20	15	17	19	50	44

Note: Results in bold indicate elevated readings during adverse weather conditions. MPO was not required to execute dust delays/shutdowns of operations and cease 'dust generating activities' under the EPL 20850 or DA 92/97 consent conditions in July 2019.

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

5.2 PM₁₀ Results – Annual rolling average

Elevated readings have been measured for annual rolling average of PM₁₀ data collected since the amendment of the limit from 30 µg/m³ to 25 µg/m³ during approval of Modification 3 (MOD 3) of DA 92/97, dated 24 August 2018. MPO is currently in the process of undergoing a data validation and compliance review of this data.

Real time PM₁₀ annual rolling averages for July 2019 are presented in **Figure 5-2** below.

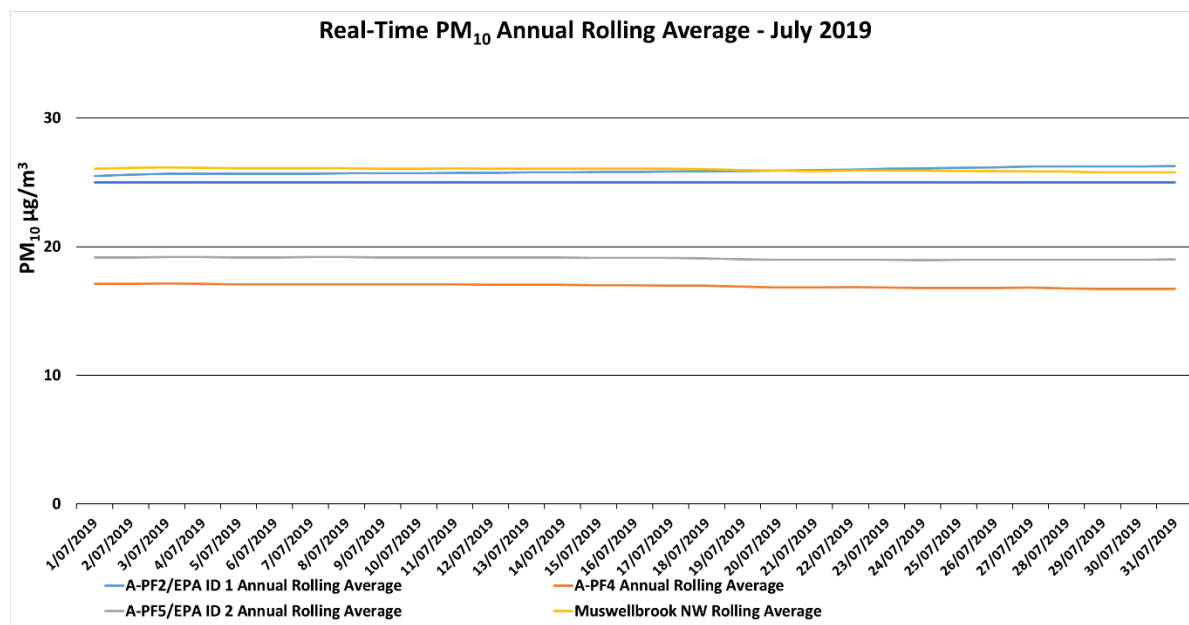


Figure 5-2: Real-time PM₁₀ Annual Rolling average results for July 2019.

5.3 PM_{2.5} Results – 24 hour rolling average

During the July 2019 monitoring period there were no elevated readings measured in accordance with the DA 92/97 limit of 25 µg/m³ for the 24 hour rolling average.

Real time PM_{2.5} daily average results for July 2019 are presented in **Figure 5-3** below.

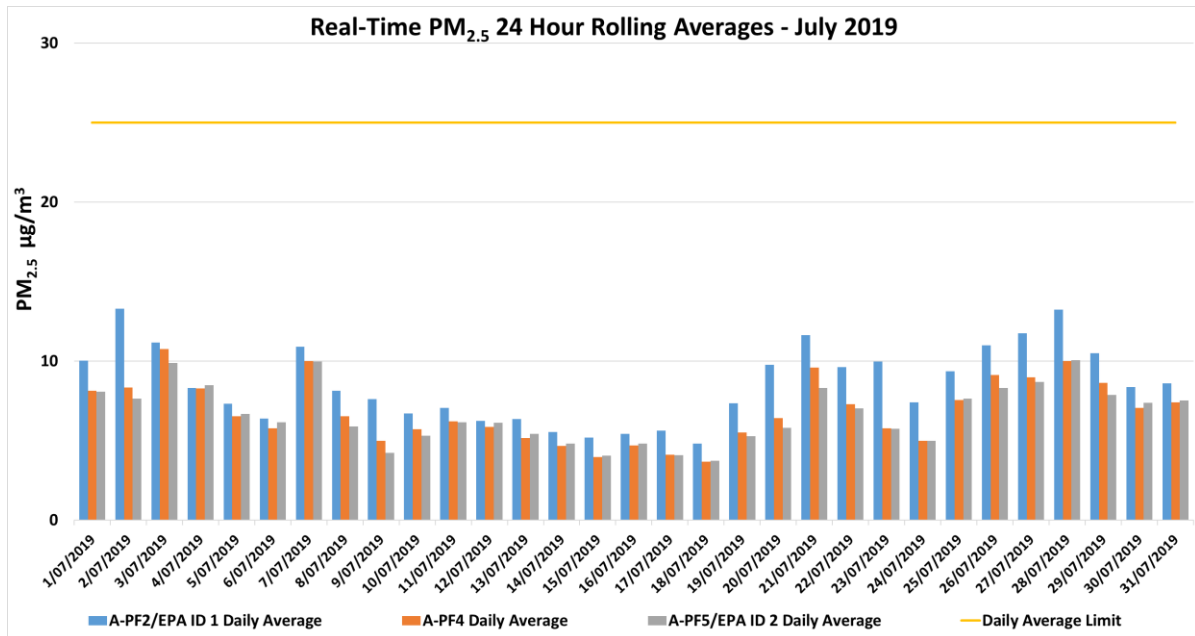


Figure 5-3: Real-time PM_{2.5} Daily Rolling average results for July 2019.

5.4 PM_{2.5} Results - Annual rolling average

The requirement of annual rolling average of PM_{2.5} data was incepted during MOD 3 of DA 92/97, dated 24 August 2018. Insufficient data as of July 2019 has been collected to calculate the annual rolling average.

6. Surface Water Monitoring

6.1 Methodology

Surface water quality is monitored at 13 sites on a monthly basis, with additional monitoring conducted if triggered by a rain event. A comprehensive suite of analysis is performed at these sites on a quarterly basis.

6.2 Assessment Criteria

Surface waters were assessed 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.

6.3 Results

Monthly and rain event surface water monitoring was conducted by AECOM on 25 July 2019. Laboratory analysis was performed by SRT and SGS, both NATA accredited laboratories. Monthly monitoring results for pH, EC, TSS and TDS are presented in **Table 6-1**.

Table 6-1 – MPO Monthly Surface Water Monitoring Results – 25 July 2019

Station	pH	Electrical Conductivity (EC) ($\mu\text{s}/\text{cm}$) ¹	Total Suspended Solids (TSS) (mg/L)	Total Dissolved Solids (TDS) (mg/L)
W1	7.9	380	5	271
W2	7.6	390	5	371
W3	7.9	420	5	297
W4	7.5	1800	7	1100
W5	*	*	*	*
W6	7.8	390	3	267
W7	*	*	*	*
W9	*	*	*	*
W11	7.7	6900	10	4200
W12	7.8	6700	96	3890
W13	*	*	*	*
W14	*	*	*	*
W15	8.1	490	9	366

Note: 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

¹ 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).

Five of the thirteen monitoring locations were found to be dry on 25 July 2019. All sites sampled were below or inside the trigger level values, with the exception of pH at sampling location W2. An investigation will be triggered if this occurs for three consecutive sampling events in accordance MPO Water Management Plan (MACH Energy, 2018).

7. Groundwater Monitoring

Groundwater monitoring did not occur in July 2019. The next quarterly monitoring event is scheduled for August 2019.

8. Noise Monitoring

Attended noise monitoring was undertaken during the night period of 4 July 2019 at seven monitoring locations as per the MPO Noise Management Plan (MACH Energy, 2018) in accordance with DA 92/97 and EPL 20850.

8.1 Results

The results for night time attended noise monitoring for noise generated by MPO in July 2019 against noise criteria is shown in **Table 8-1**.

Table 8-1 – $L_{Aeq,15min}$ Generated by MPO Night-Time Monitoring – 4 July 2019

Location	Start Date and Time	Wind Speed m/s	Stability Class	Criterion dB	Criterion Applies ¹	MPO Only L_{Aeq} dB ^{2,4,5}	Exceedance dB ^{3,4}
N-AT1	04/07/19 23:46	5.2	D	43	No	Inaudible	NA
N-AT2	04/07/19 22:00	3.8	E	36	No	Inaudible	NA
N-AT3	04/07/19 22:53	5.3	D	35	No	Not measurable	NA
N-AT4	04/07/19 23:21	5.0	D	42	No	Inaudible	NA
N-AT5	04/07/19 23:45	5.2	D	40	No	Inaudible	NA
N-AT6	04/07/19 22:41	4.7	E	35	No	Inaudible	NA
N-AT7 ⁵	04/07/19 22:29	6.3	D	40	No	Inaudible	NA

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;
- Bold results indicate exceedance of criteria;
- Temporary monitoring at N-AT7 commenced in January 2019 in order to better represent receptors north of the site. This location is not required in accordance with the approved MPO Noise Management Plan (Mach Energy, 2018) and is used for management purposes only.

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 Noise Management Plan (MACH Energy, 2018). Noise levels from MPO complied with noise limits at all monitoring locations during the July 2019 monitoring period.

9. Blast Monitoring

Results for July 2019 are presented in **Table 9-1**.

Table 9-1 – MPO Blast Monitoring Results – July 2019

Date Fired	Time Fired	Vibration BVOA	Overpressure BVOA	Vibration BVOC	Overpressure BVOC	Vibration BVO2	Overpressure BV02
4/1/19	13:28	0.900 mm/s	90.9 DBL	0.280 mm/s	98.9 DBL	0.390 mm/s	99 DBL
9/1/19	15:15	0.730 mm/s	97.4 DBL	0.420 mm/s	92.6 DBL	0.510 mm/s	100.9 DBL
10/1/19	14:30	0.07 mm/s	107.9 DBL	0.03 mm/s	102.9 DBL	0.51 mm/s	99.3 DBL
16/1/19	14:30	2.660 mm/s	100.3 DBL	1.480 mm/s	93 DBL	1.860 mm/s	102.9 DBL
18/1/19	10:15	3.700 mm/s	101.4 DBL	2.480 mm/s	99.2 DBL	0.280 mm/s	85.5 DBL
23/1/19	13:52	0.670 mm/s	99.3 DBL	0.380 mm/s	103.6 DBL	0.880 mm/s	107.9 DBL
01/02/19	13:14	1.350 mm/s	106 DBL	0.970 mm/s	114.9 DBL	1.190 mm/s	105.1 DBL
07/02/19	13:00	0.600 mm/s	97.4 DBL	0.320 mm/s	87.5 DBL	0.630 mm/s	105 DBL
13/02/19	13:01	1.590 mm/s	100.5 DBL	0.550 mm/s	90.9 DBL	1.910 mm/s	103.5 DBL
21/02/19	15:01	0.390 mm/s	105.2 DBL	0.440 mm/s	96.9 DBL	1.020 mm/s	105.8 DBL
28/02/19	15:21	1.270 mm/s	98.1 DBL	0.800 mm/s	97.6 DBL	2.050 mm/s	104.0 DBL
8/03/2019	10:13	0.920 mm/s	101.2 DBL	0.460 mm/s	94.6 DBL	0.580 mm/s	110.2 DBL
15/03/19	13:16	1.240 mm/s	108 DBL	0.760 mm/s	99.2 DBL	1.510 mm/s	111.3 DBL
20/03/19	13:06	1.100 mm/s	99 DBL	0.320 mm/s	95.2 DBL	0.700 mm/s	104.5 DBL
22/03/19	12:48	0.950 mm/s	92.7 DBL	0.650 mm/s	91.4 DBL	0.890 mm/s	101 DBL

29/03/19	09:36	0.340 mm/s	96.5 DBL	0.140 mm/s	95.5 DBL	0.710 mm/s	106.3 DBL
4/04/2019	13:00	0.320 mm/s	107.6 DBL	0.110 mm/s	104.8 DBL	0.360 mm/s	109 DBL
11/04/2019	13:01	0.460 mm/s	99.6 DBL	0.290 mm/s	99.4 DBL	0.820 mm/s	100.5 DBL
17/04/2019	13:06	0.780 mm/s	96.5 DBL	0.800 mm/s	92.9 DBL	3.820 mm/s	107 DBL
2/5/2019	13:06	0.740 mm/s	101.6 DBL	0.650 mm/s	94.2 DBL	3.070 mm/s	113.4 DBL
3/5/2019	11:05	0.920 mm/s	95.3 DBL	0.950 mm/s	90.9 DBL	2.720 mm/s	106.9 DBL
9/5/2019	13:15	0.910 mm/s	95 DBL	0.730 mm/s	92.6 DBL	1.760 mm/s	103.4 DBL
14/5/2019	13:26	0.360 mm/s	99.3 DBL	0.310 mm/s	101.8 DBL	1.110 mm/s	109.5 DBL
22/5/2019	13:05	0.170 mm/s	97.2 DBL	0.220 mm/s	93.4 DBL	0.380 mm/s	100.3 DBL
23/5/2019	13:02	0.100 mm/s	85.5 DBL	0.050 mm/s	86.8 DBL	0.270 mm/s	93.6 DBL
28/5/2019	09:37	1.170 mm/s	103.2 DBL	0.460 mm/s	103.6 DBL	0.810 mm/s	109.8 DBL
30/5/2019	13:14	0.580 mm/s	101.1 DBL	0.200 mm/s	106.4 DBL	1.070 mm/s	104 DBL
6/06/2019	13:11	0.360 mm/s	99.3 DBL	0.180 mm/s	98.3 DBL	0.630 mm/s	104.8 DBL
13/06/19	13:05	0.630 mm/s	111.1 DBL	0.210 mm/s	111.2 DBL	0.740 mm/s	113.3 DBL
14/06/19	13:09	0.340 mm/s	96.2 DBL	0.160 mm/s	90 DBL	0.680 mm/s	106.1 DBL
21/06/19	13:59	0.830 mm/s	106.3 DBL	0.380 mm/s	102 DBL	1.460 mm/s	117.3 DBL
26/06/19	13:04	0.280 mm/s	99.9 DBL	0.100 mm/s	98.4 DBL	0.300 mm/s	103.1 DBL
15/07/19	09:10	0.610 mm/s	106.6 DBL	0.320 mm/s	109.6 DBL	0.570 mm/s	117.7 DBL
17/07/19	09:00	0.570 mm/s	96 DBL	0.280 mm/s	83.4 DBL	0.500 mm/s	107 DBL

19/07/19	09:00	0.590 mm/s	87.3 DBL	0.300 mm/s	100.9 DBL	1.010 mm/s	103.9 DBL
26/07/19	13:04	0.270 mm/s	93.6 DBL	0.110 mm/s	88.6 DBL	0.670 mm/s	103.2 DBL
30/07/19	12:58	0.880 mm/s	101.3 DBL	0.370 mm/s	99.6 DBL	1.860 mm/s	105.8 DBL
31/07/19	12:58	0.190 mm/s	92.0 DBL	0.07 mm/s	98.4 DBL	0.35 mm/s	102.4 DBL

Blast results during the July 2019 monitoring period complied with criteria at each monitoring site. Whilst a blast event was measured to be elevated beyond 115 DBL on 15 July 2019, the airblast overpressure was within 120 dB and is expected to fall within the 5% of total blasts over the period of 12 months, in accordance with Table 7 of Condition 10, Schedule 3, DA 92/97.

10. Meteorological Monitoring

Weather data is measured continuously at the Kayuga Road meteorological station (M-WS4). In addition to air quality parameters, the weather station also measures wind speed and direction, temperature (at 2 m and 10 m), solar radiation, relative humidity, rainfall, atmospheric pressure, and sigma theta. All meteorological data was captured during the July 2019 monitoring period, with the exception of minor solar radiation data loss (2.1%) due to maintenance.