



Rasp Mine  
Monthly Environmental Monitoring Report  
December 2025

## INTRODUCTION

Broken Hill Operations Pty Ltd (BHOP) [a wholly owned subsidiary of Broken Hill Mines (BHM)] owns and operates the Rasp Mine (the Mine), which is located centrally within the City of Broken Hill on Consolidated Mine Lease 7 (CML7).

Mining has been undertaken within CML7 since 1885. The existing operations at the Rasp Mine include underground mining operations, a processing plant producing zinc and lead concentrates and a rail siding for concentrate dispatch. These operations are undertaken in accordance with Project Approval 07\_0018 under Part3A of the Environmental Planning and Assessment Act 1979 (EP&A Act).

As the holder of an Environmental Protection Licence, 12559, BHOP is required, under Section 66(6) of the NSW *Protection of the Environment Operations Act 1997*, to publish pollution monitoring data. In addition BHOP is required to publish data in accordance with its Project Approval 07\_0018 Schedule 4 Condition 9. These documents can be found on the Broken Hill Mines web pages at [www.coolabahmetals.com.au/sustainability-1](http://www.coolabahmetals.com.au/sustainability-1).

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## 1 Air Quality

Table 1 below shows the following pollutants as listed in the Project Approval DA 07\_0018 are required to be monitored in EPL 12559:

**Table 1: EPL 12559 monitoring criteria  
Long Term Criteria for Particulate Matter**

Pollutant	Averaging Period	Criterion
Total solid particles (TSP)	Annual	90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	25 µg/m <sup>3</sup>

**Short Term Criterion for Particulate Matter**

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	50 µg/m <sup>3</sup>

**Long Term Criteria for Deposited Dust**

Pollutant	Averaging Period	Maximum Project Contribution	Maximum Total Deposited Dust Level
Deposited dust	Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month

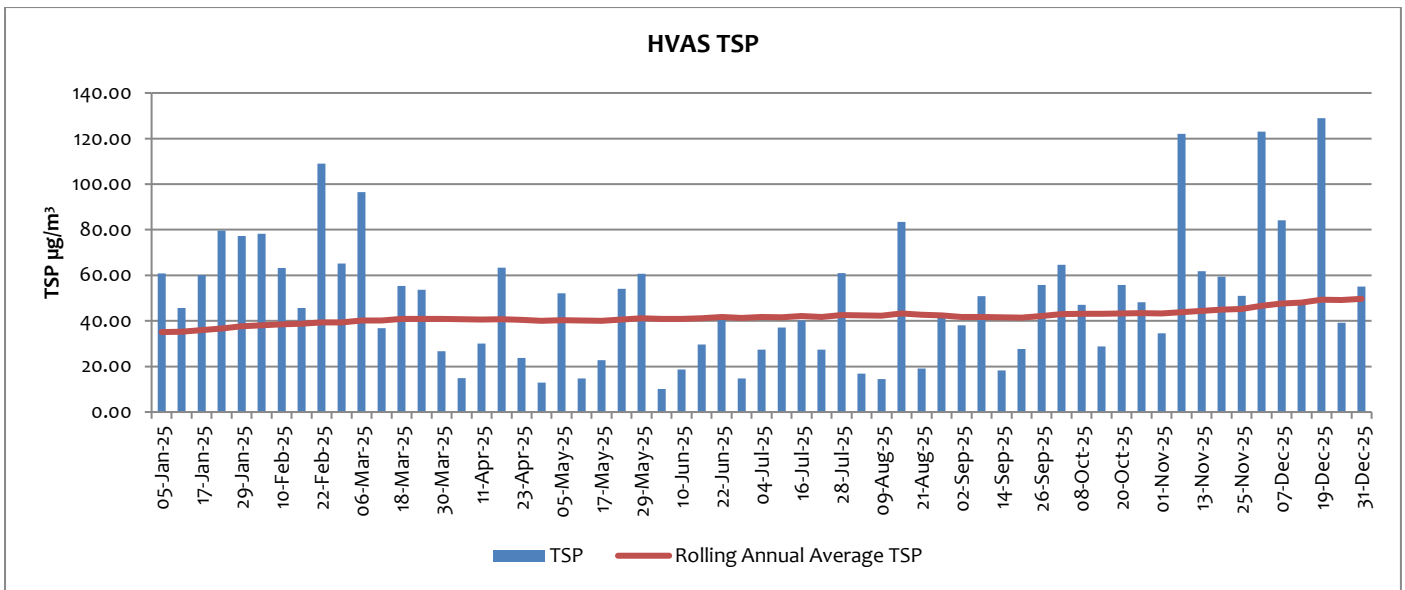
### 1.1 High Volume Air Samplers

There are four high volume air samplers used to measure ambient air quality at the Rasp Mine – HVAS (EPL10) and HVAS1 (EPL11) are located at the Silver Tank, central and to the south of the mine lease, and HVAS2 (EPL12) and HVAS3 (EPL57) are located adjacent to and north of Blackwood Pit. A map indicating these locations can be found in appendix 1. HVAS and HVAS3 sample for total suspended particulates (TSP) and lead dust, and HVAS1 and HVAS2 sample for particulate matter less than 10 microns (PM<sub>10</sub>) and lead dust.

**TABLE 2: HVAS (EPL10) - Silver Tank (On Site) Results for December 2025**

DATE	TSP (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )
01-December-25	123.00	1.000
07-December-25	84.10	0.439
13-December-25	47.60	0.214
19-December-25	129.00	0.495
25-December-25	39.20	0.059
31-December-25	55.10	0.139

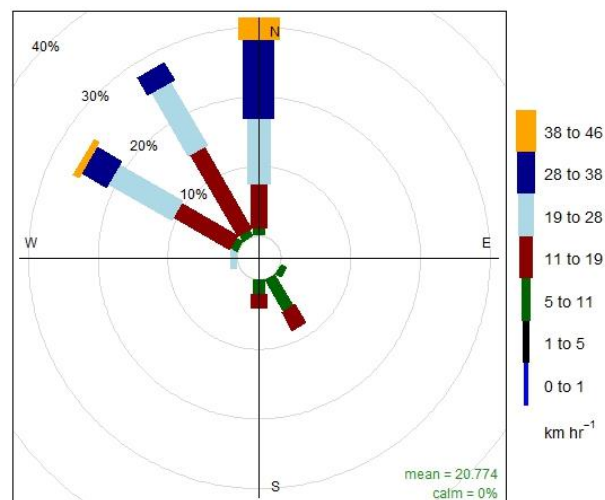
HVAS (EPL10) is located on the southern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location.



**Figure 1: HVAS TSP measurements 12-month overview**

TSP dust results at HVAS for the month of December were on average higher than the measurements from previous month (see figure 1). The highest TSP result measured at HVAS (EPL10) for December was 129.0 µg/m<sup>3</sup> sampled on 19 December. This was also the highest concentration measured by this sampler over the last 12 months. The wind sensor from the on-site weather station indicated that strong winds—mostly moderate breezes and up to strong breezes—were blowing predominantly from NNW/N directions, as shown in figure 2 below. The second highest TSP result measured at HVAS (EPL10) for December was 123.0 µg/m<sup>3</sup> sampled on 1 December when winds were predominantly from the SW. This was due to dust storms on both dates recorded by other site monitors. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads. The annual rolling average for TSP at this location is 49.7 µg/m<sup>3</sup> at the end of December, significantly higher than the average of 34.5 µg/m<sup>3</sup> at the end of December 2024.

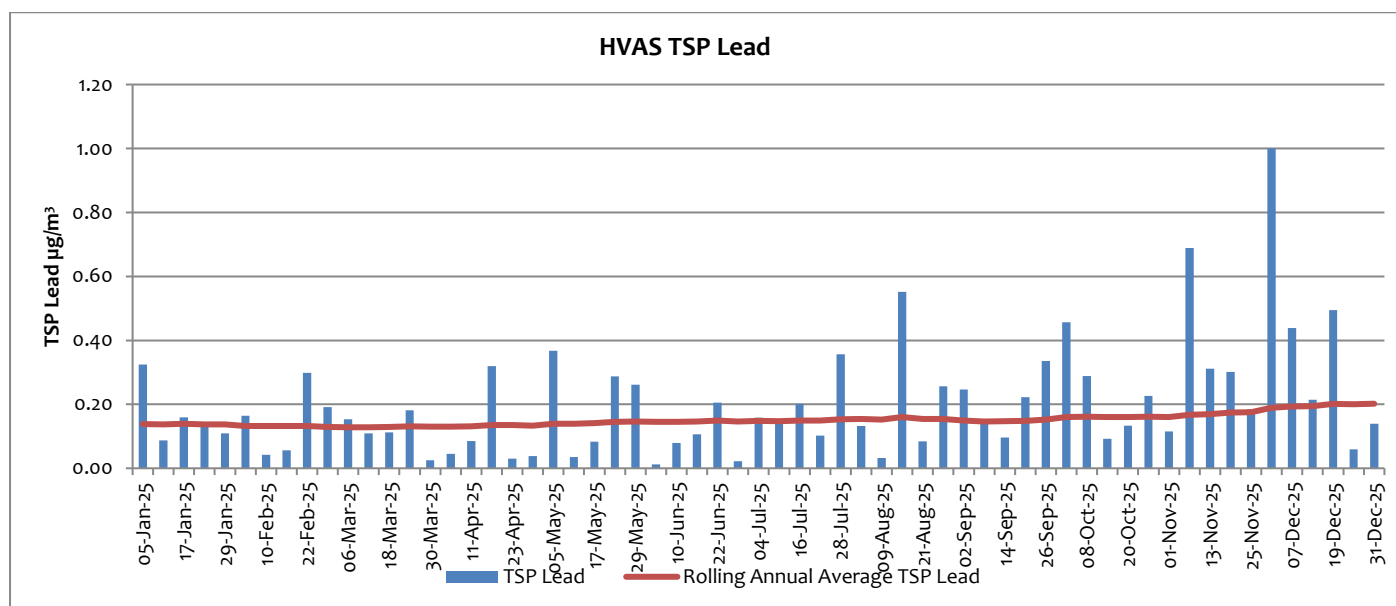
Broken Hill Operations Pty Ltd - Wind Rose 19 Dec. 2025



Frequency of counts by wind direction (%)

**Figure 2: Wind rose for 19 December**

The annual rolling average for TSP is determined using data with extreme dust events included.



**Figure 3: Lead in HVAS TSP measurements 12-month overview**

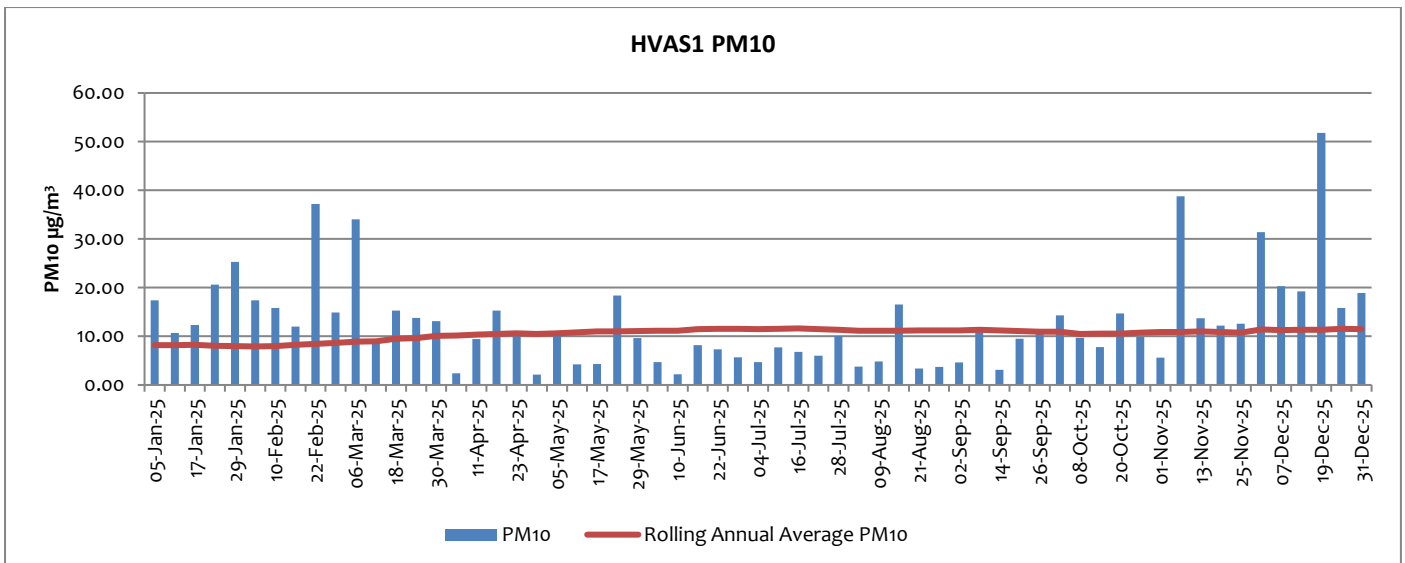
TSP Lead dust results at HVAS for the month of December were very heterogenous and on average higher to previous months (see figure 3 above). The highest TSP Lead level for December was 1.0 µg/m<sup>3</sup> on 1 December. This was also the highest measured Lead concentration measured over the last 12 months. Wind directions were mostly blowing from SW directions on that day (see wind rose in figure 8), suggesting that the lead originated from off-site sources. Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads.

The rolling annual average for TSP Lead in December 2025 was 0.20 µg/m<sup>3</sup>, significantly higher than the rolling annual average of 0.13 µg/m<sup>3</sup> for TSP Lead at the end of December 2024.

### ***HVAS1 (EPL11) - Silver Tank (On Site) Results for December 2025***

DATE	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> Lead (µg/m <sup>3</sup> )
01-December-25	31.40	0.259
07-December-25	20.30	0.054
13-December-25	19.20	0.056
19-December-25	51.80	0.141
25-December-25	15.80	0.012
31-December-25	18.90	0.032

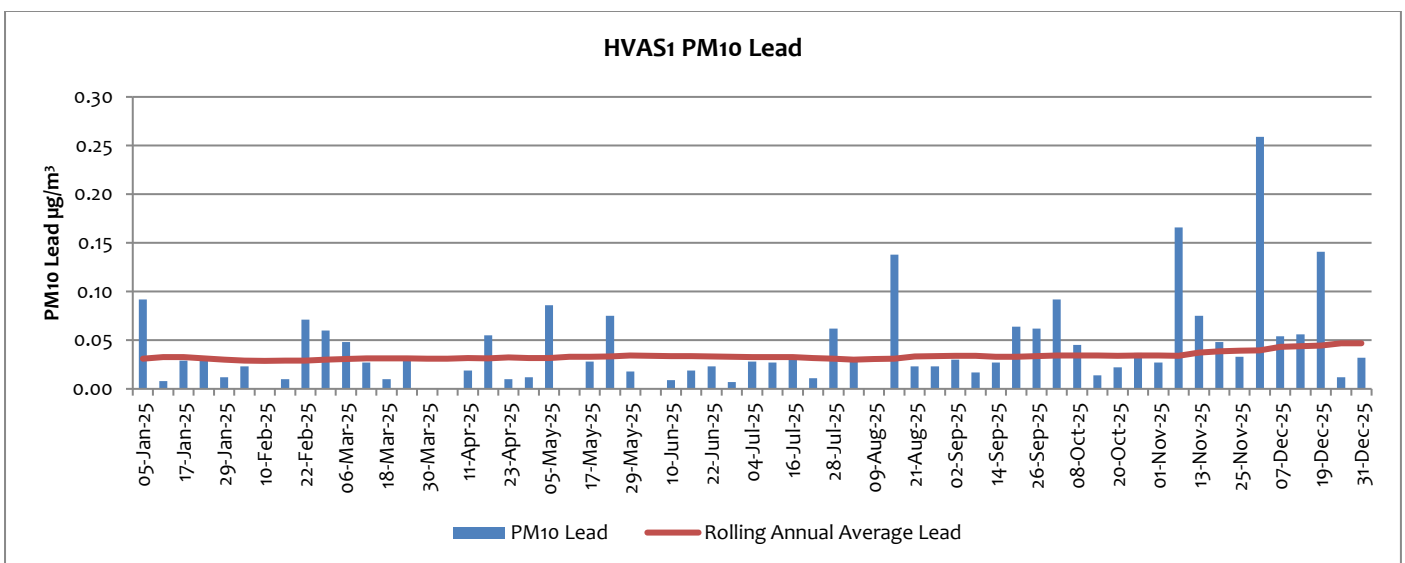
HVAS1 (EPL11) is located on the southern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location.



**Figure 4: HVAS01 PM<sub>10</sub> measurements 12-month overview**

PM<sub>10</sub> dust results at HVAS1 for the month of December were on average slightly higher than in previous months. The highest PM<sub>10</sub> dust level for December was measured on 19 December (see figure 4 above) when a dust storm was occurring. The dust mass concentration reached 51.8 µg/m<sup>3</sup> for that sample.

Water carts apply water to site roads daily and dust suppressant is applied to free areas and unsealed roads. The annual rolling average for PM<sub>10</sub> dust at this location is 11.4 µg/m<sup>3</sup> at the end of December 2025, higher than the annual rolling average at the end of December 2024 which was 8.3 µg/m<sup>3</sup>. External and extreme dust events are recorded in measurements.



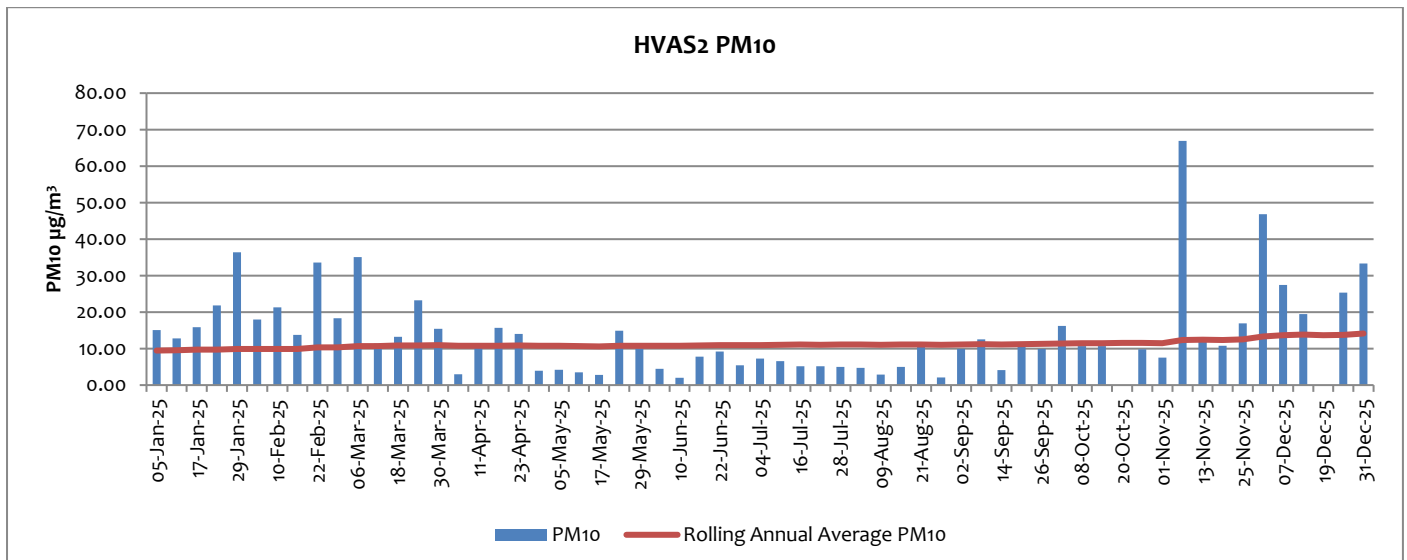
**Figure 5: Lead in HVAS01 PM<sub>10</sub> measurements 12-month overview**

PM<sub>10</sub> Lead dust results at HVAS1 in the month of December were heterogeneous, with one measurement significantly above all values observed during this month. This highest Lead PM<sub>10</sub> result was 0.259 µg/m<sup>3</sup>. It was also the highest over the last 12 months. It was sampled on 1 December during a dust storm when winds were blowing from the SW suggesting the main contribution was from external sources. Water carts apply water to site roads daily and dust

suppressant is applied to free areas and unsealed roads. The rolling annual average for PM<sub>10</sub> Lead measured by HVA51 in December was 0.05 µg/m<sup>3</sup>, higher than the average of 0.03 µg/m<sup>3</sup> in December 2024.

***HVAS 2 (EPL12) – Blackwood Pit (On Site) Results for December 2025***

DATE	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>10</sub> Lead (µg/m <sup>3</sup> )
<b>01-December-25</b>	<b>46.80</b>	<b>0.256</b>
<b>07-December-25</b>	<b>27.40</b>	<b>0.119</b>
<b>13-December-25</b>	<b>19.50</b>	<b>0.023</b>
<b>19-December-25</b>	<b>No sample</b>	<b>No sample</b>
<b>25-December-25</b>	<b>25.30</b>	<b>0.05</b>
<b>31-December-25</b>	<b>33.30</b>	<b>0.16</b>



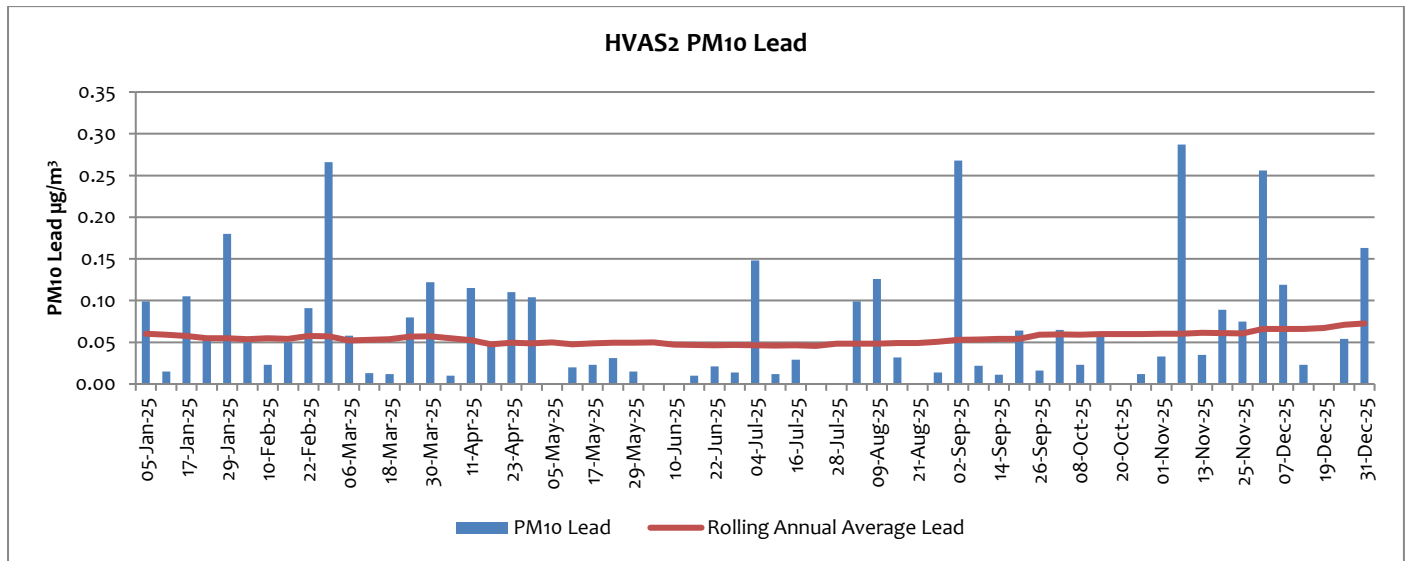
**Figure 6: HVA502 PM<sub>10</sub> measurements 12-month overview**

HVA52 (EPL12) is located on the northern boundary of Rasp Mine and while limit criteria do not apply at this point, they do apply at the closest residential location.

HVA502 PM<sub>10</sub> measurements in the month of December were on average higher than those from the previous month, with all values above the 12-month rolling average. The highest recorded PM<sub>10</sub> dust reading for December was 46.8 µg/m<sup>3</sup> on 1 December during a dust storm when winds were blowing from WSW/SW (see figure 8 below), The annual rolling average for PM<sub>10</sub> dust at this location is 14.1 µg/m<sup>3</sup> at the end of December, significantly up from 9.41 µg/m<sup>3</sup> in December 2024.

The result for the sampling conducted on 19 December is neither displayed in Figure 6 nor discussed here as HVA52 operated for less than 23 hours on that day. The failure to monitor was reported to the regulators.

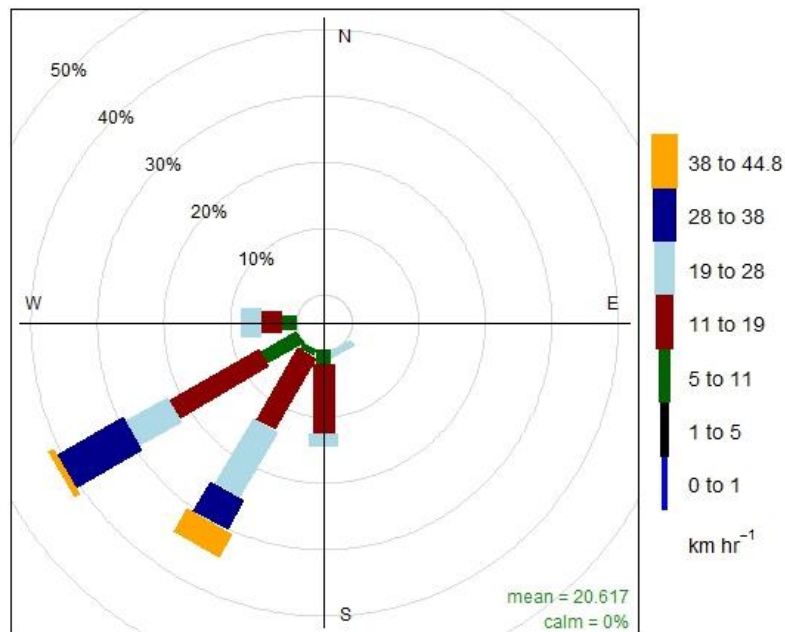
The annual rolling average for PM<sub>10</sub> dust is determined using data with extreme dust events included.



**Figure 7: Lead in HVAS02 PM<sub>10</sub> measurements 12-month overview**

PM<sub>10</sub> lead levels in December are on average higher than those recorded over the past two months. The highest recorded PM<sub>10</sub> Lead dust reading for December was 0.26 µg/m<sup>3</sup> on 1 December when predominant winds were from the Southwest (see figure 8 below) suggesting contribution from internal sources. The surface of Blackwoods TSF2 is treated with dust suppressant and the TSF spray system has been installed and is operational. The rolling annual average for PM<sub>10</sub> Lead in December was 0.07 µg/m<sup>3</sup>, up from 0.06 µg/m<sup>3</sup> in December 2024.

**Broken Hill Operations Pty Ltd - Wind Rose 01 Dec. 2025**

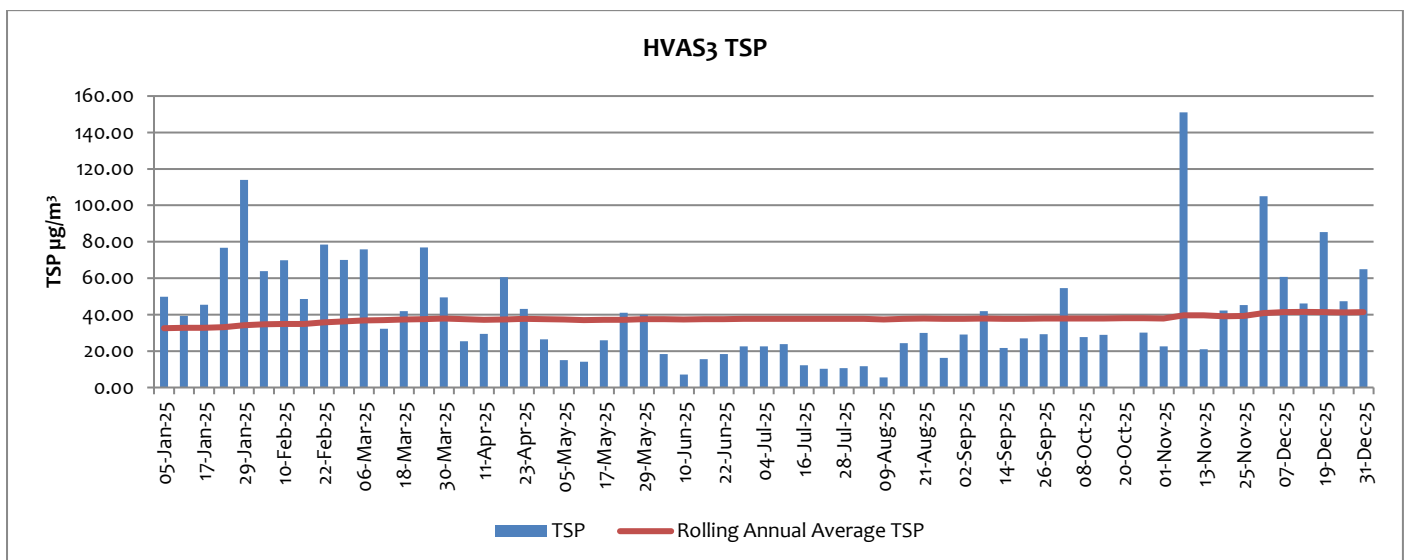


**Frequency of counts by wind direction (%)**

**Figure 8: Wind rose for 01 December**

***HVAS 3 (EPL57) – Blackwood Pit (On Site) Results for December 2025***

DATE	TSP ( $\mu\text{g}/\text{m}^3$ )	Lead ( $\mu\text{g}/\text{m}^3$ )
<b>01-December-25</b>	<b>105</b>	<b>0.631</b>
<b>07-December-25</b>	<b>60.8</b>	<b>0.325</b>
<b>13-December-25</b>	<b>46.2</b>	<b>0.150</b>
<b>19-December-25</b>	<b>85.3</b>	<b>0.295</b>
<b>25-December-25</b>	<b>47.4</b>	<b>0.185</b>
<b>31-December-25</b>	<b>65</b>	<b>0.505</b>

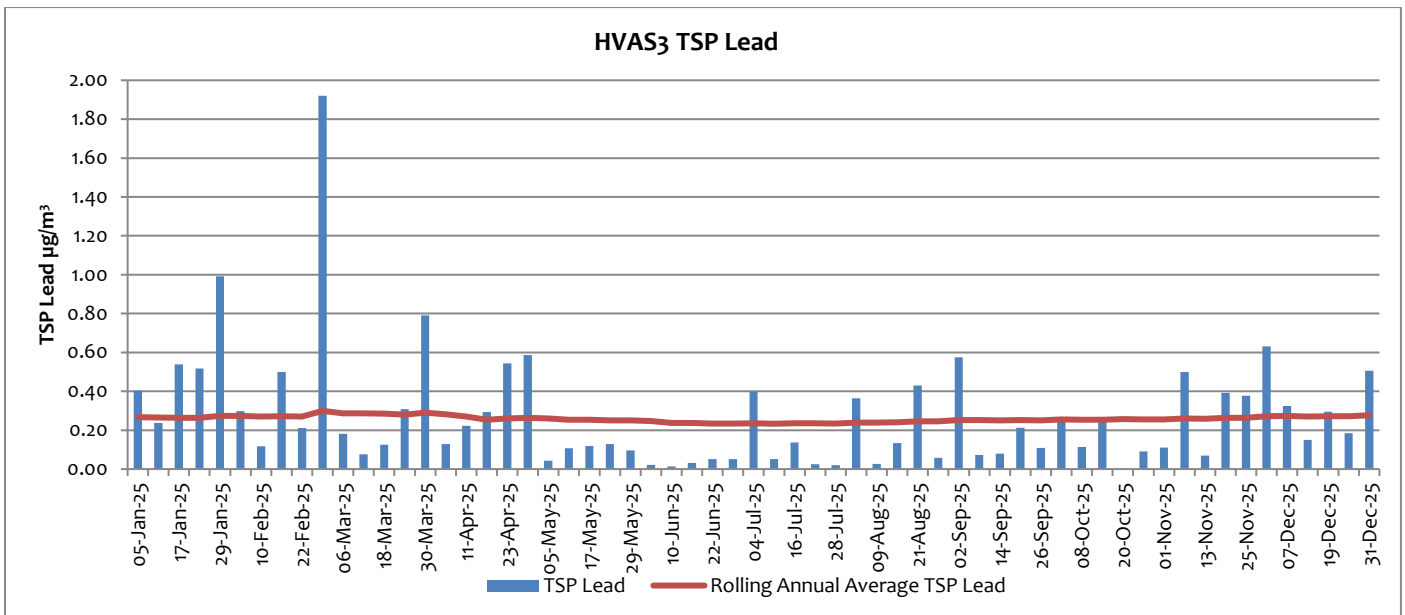


**Figure 9: HVAS03 TSP measurements 12-month overview**

On average, TSP values measured at site 2 have shown a clear increase over the past 4 months. As it can be seen on figure 9 above, TSP levels at HVAS3 were highest on 1 December with a result of  $105 \mu\text{g}/\text{m}^3$ . All values were above the annual average results. The wind sensor from the on-site weather station indicated that relatively strong winds—mostly moderate breezes or stronger—were mostly blowing from Southwest, as shown in figure 8 above, implying that the source was probably internal to the mining site.

Non-operational surfaces of Blackwoods TSF2 are treated with dust suppressant and the TSF spray system has been installed and is operational. The annual rolling average for TSP dust at this location is  $41.4 \mu\text{g}/\text{m}^3$  at the end of December, up from  $32.3 \mu\text{g}/\text{m}^3$  in December 2024.

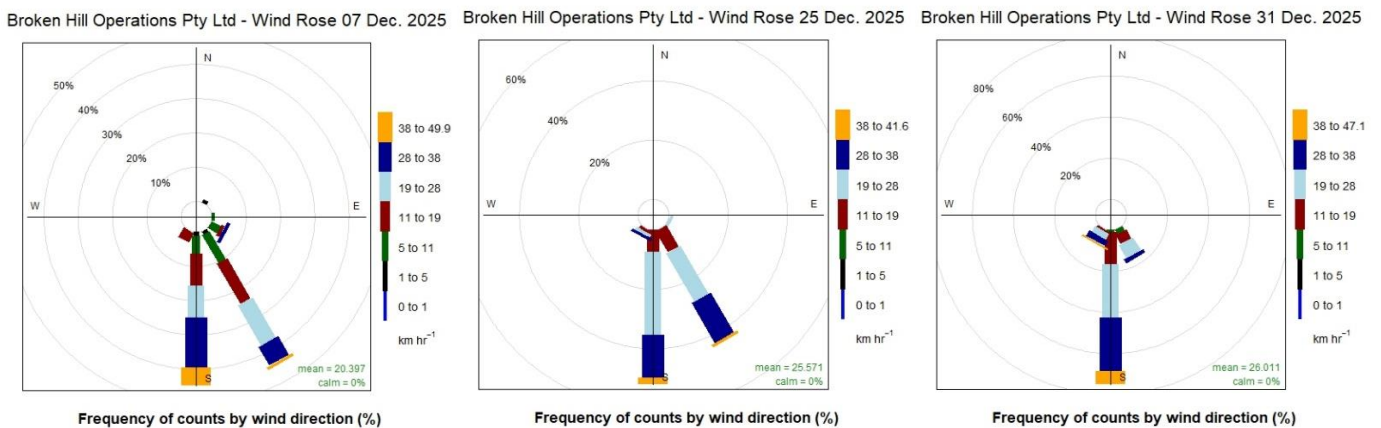
The annual rolling average for TSP is determined using data with extreme dust events included.



**Figure 10: Lead in HVAS03 TSP measurements 12-month overview**

TSP Lead levels in December were comparable to those from the previous month (see figure 10 above). A lead concentration of 0.63 µg/m<sup>3</sup> was recorded as the highest value on 1 December. It was sampled when winds were from WSW/SW (see figure 8), suggesting contribution from site activities. The rolling annual average for TSP Lead in December was 0.28 µg/m<sup>3</sup>, slightly up from 0.26 µg/m<sup>3</sup> in December 2024. Non-operational surfaces of Blackwoods TSF2 are treated with dust suppressant and the TSF spray system has been installed.

Figure 11 below presents wind roses for the remaining sampling days in December. Winds predominantly blew from southerly directions on all days.



**Figure 11: Wind roses for 7, 25 and 31 December**

## 1.2 Tapered Element Oscillating Microbalance Sampling (TEOM)

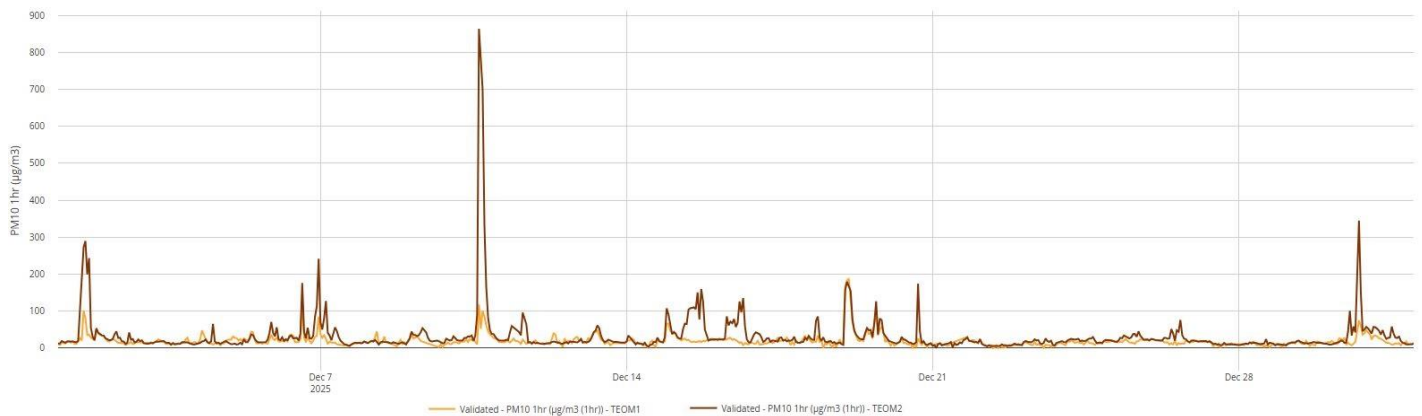
There are two Tapered Element Oscillating Microbalance (TEOM) monitoring units used to measure ambient air quality at the Rasp Mine – TEOM1 (EPL13) is located off-site within the perimeter fence of Essential Water south of the mine

lease, and TEOM2 (EPL14) is located on-site adjacent to Blackwood Pit to the north of the mine lease. A map indicating these locations can be found appendix 1. TEOM1 and TEOM2 are designed to operate continuously and monitor concentrations of particulate matter less than 10 microns (PM<sub>10</sub>) in size with a time resolution of five minutes.

Project Approval 07\_0018 criteria apply at TEOM1 and TEOM2, with two criteria listed for PM<sub>10</sub>, a 24-hour average criteria of 50 µg/m<sup>3</sup> and an annual average criteria of 25 µg/m<sup>3</sup>. Both Project Approval and Environment Protection Licence criteria exclude dust storms and other extraordinary events.

TEOM data is validated by third party NATA-accredited consultants using Australian Standards and internal procedures and is used to populate the table of TEOM monthly data provided below.

Validated hourly data outputs from both instruments with no correction for extreme/external events are shown in figure 12 below.



**Figure 12: TEOM1 and TEOM2-Raw validated hourly-averaged PM<sub>10</sub> concentrations**

December saw a number of regional dust events occurring resulting in one dust exceedance at TEOM2 on 10 December with a 24-hour average of 101.1 µg/m<sup>3</sup> recorded. This exceedance was reported to regulators.

Some data loss occurred at site 1 on 21 December. A power supply issue led to an interruption of PM<sub>10</sub> monitoring over more than 6 hours. The incident was reported to the regulators.

The data capture rate for the TEOM1 and TEOM2 monitors in December were respectively 97.2% and 99.0%, both exceeding the 95% requirement.

Six-monthly servicing of TEOMs was conducted from 9 to 11 December. The maintenance performed on TEOM1 on 9 December lasted more than 6 hours, resulting in the loss of validated 24-hour data for that day. Quarterly maintenance took place on 8 and 29 October.

***TEOM1 (EPL13) (Off Site) and TEOM2 (EPL14) (On Site) Validated and Corrected Results for December 2025***

<b>Particulate Matter &lt;10 Microns 24Hr Average</b>				
<b>Date</b>	<b>TEOM 1 (µg/m<sup>3</sup>)</b>	<b>Compliant with 50µg/m<sup>3</sup> 24hr average?</b>	<b>TEOM 2 (µg/m<sup>3</sup>)</b>	<b>Compliant with 50µg/m<sup>3</sup> 24hr average?</b>
1/12/2025	16.8	Y	46.4	Y
2/12/2025	16.3	Y	23.3	Y
3/12/2025	15	Y	14.1	Y
4/12/2025	15.2	Y	13.4	Y
5/12/2025	19.7	Y	23.6	Y
6/12/2025	21.1	Y	35.3	Y
7/12/2025	13.5	Y	26.5	Y
8/12/2025	17.7	Y	14.9	Y
9/12/2025	NS	Y	27.9	Y
10/12/2025	20.4	Y	101.1	N
11/12/2025	17	Y	31.5	Y
12/12/2025	18.7	Y	14.8	Y
13/12/2025	20.3	Y	24.2	Y
14/12/2025	14	Y	17.5	Y
15/12/2025	0	Y	45.4	Y
16/12/2025	18.3	Y	42.6	Y
17/12/2025	16.4	Y	21.6	Y
18/12/2025	15.6	Y	19.2	Y
19/12/2025	15	Y	24.1	Y
20/12/2025	11.2	Y	16.2	Y
21/12/2025	NS	N	14	Y
22/12/2025	7.1	Y	8.3	Y
23/12/2025	9.4	Y	16.3	Y
24/12/2025	14.4	Y	20.7	Y
25/12/2025	18.7	Y	26.8	Y
26/12/2025	17.4	Y	25.6	Y
27/12/2025	11.9	Y	13	Y
28/12/2025	8.9	Y	11.8	Y
29/12/2025	12.9	Y	13.6	Y
30/12/2025	18	Y	38.1	Y
31/12/2025	16.8	Y	30.5	Y

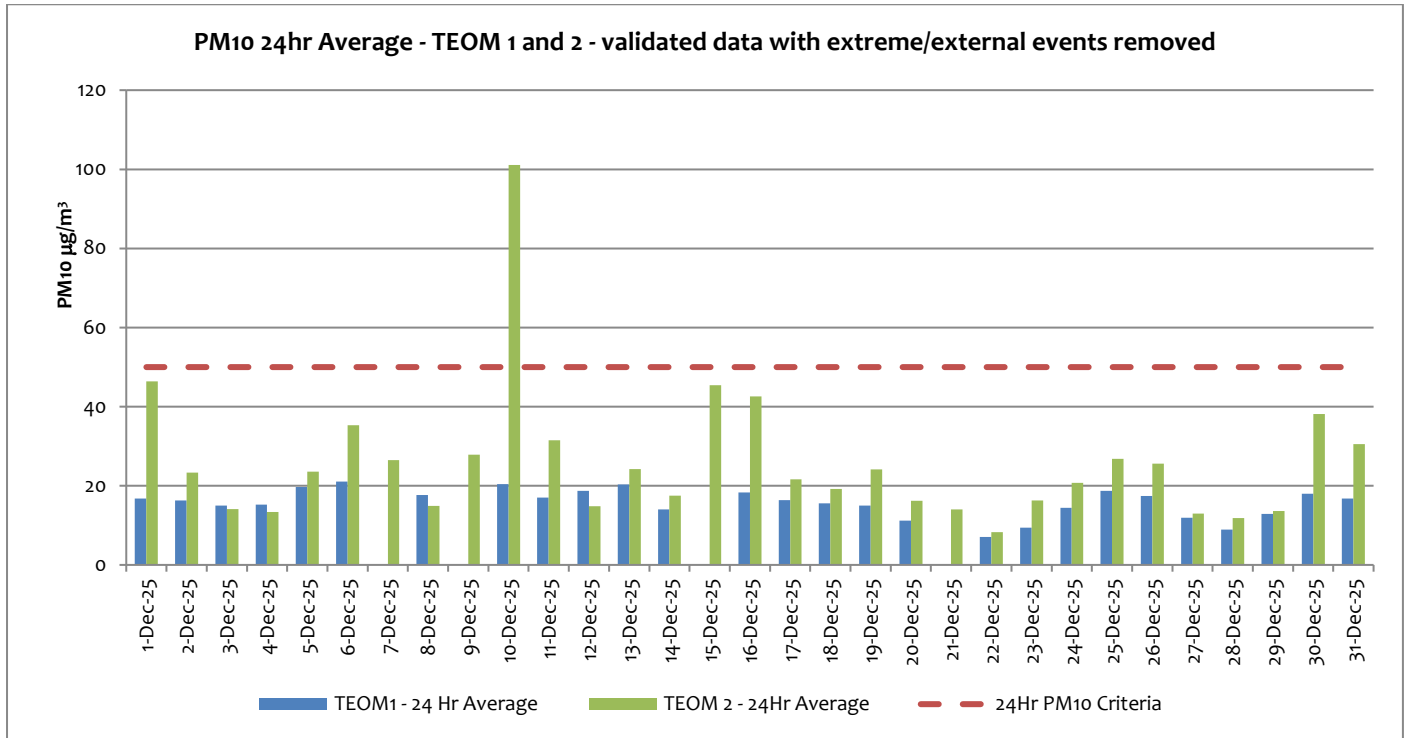
NA - sample collected but data invalid; NS – insufficient sample collected

The rolling annual average for PM<sub>10</sub> at TEOM1 with external dust events and invalid data removed for the period December 2024 to December 2025 is 12.7 µg/m<sup>3</sup>, comparable to the rolling annual average of 12.7 µg/m<sup>3</sup> at the beginning of the annual period.

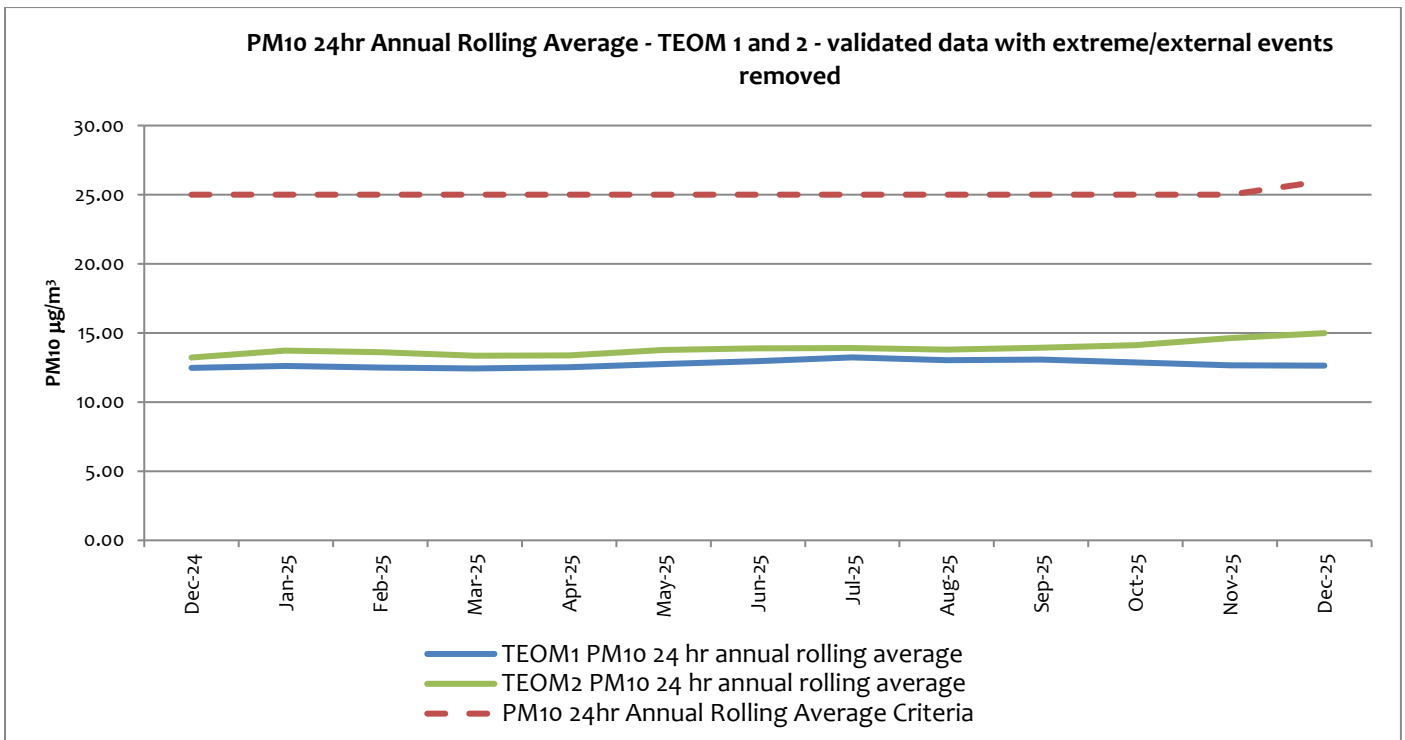
The rolling annual average for PM<sub>10</sub> at TEOM2 with external dust events and invalid data removed for the period December 2024 to December 2025 is 14.9 µg/m<sup>3</sup>, slightly higher than the rolling annual average of 13.3 µg/m<sup>3</sup> at the beginning of the reporting period.

Data collected for the dates of 1, 2, 4, 5, 7, 10, 15, 16, 18, 19, 20, 26, 30 and 31 December have been corrected due to the impact from dust storms and external events, with low impact on final dataset.

The PM<sub>10</sub> 24-hour rolling annual average for TEOM sites remain below the annual average criteria of 25 µg/m<sup>3</sup>.



**Figure 15: Site 1 and Site 2 PM<sub>10</sub> 24-hour averaged measurements**



**Figure 16: Site 1 & 2 - Annual rolling average PM<sub>10</sub> measurements 12-month overview**

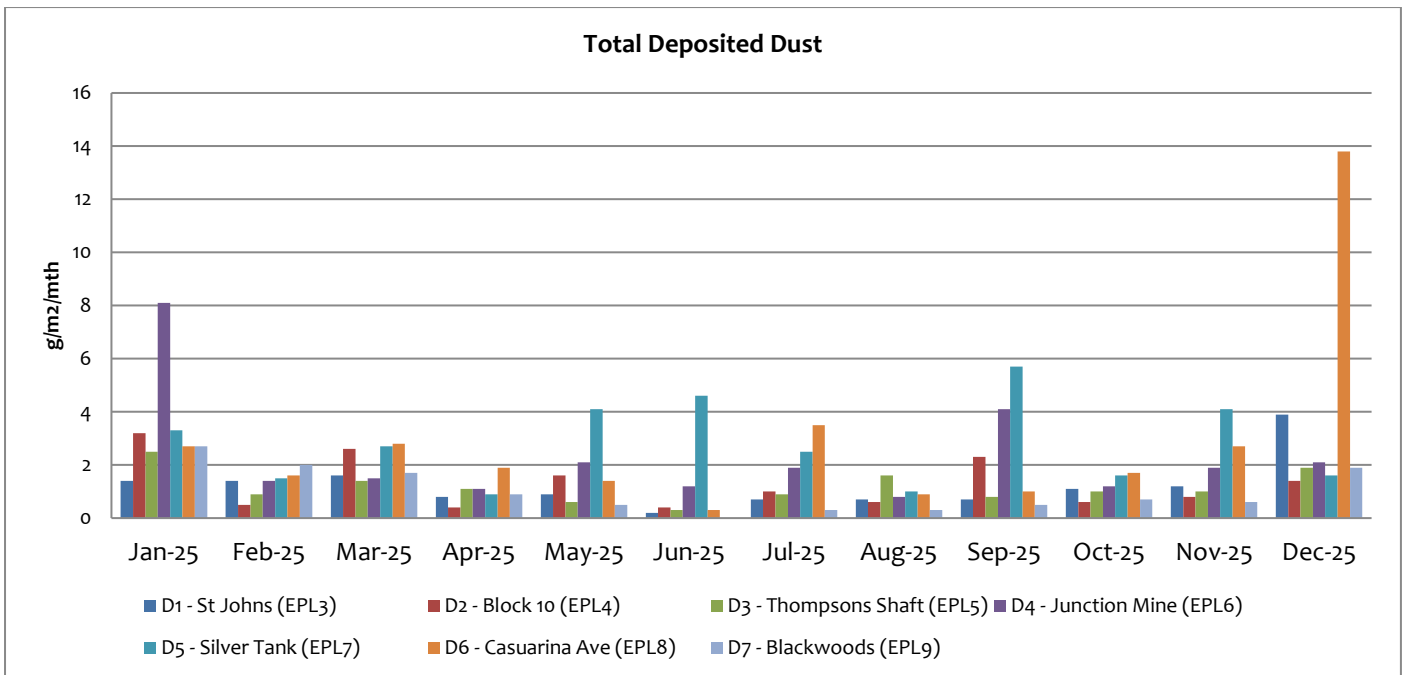
### 1.3 Dust Deposition Sampling

There are seven dust deposition gauges to measure ambient air quality at the Rasp Mine – D1 to D7. D1 and D6 are located off-site, D1 near the St Johns training facility north of the Rasp Mine and D6 in Casuarina Avenue south of the Rasp Mine. D2 to D5 and D7 are located on the mine lease in various locations. A map indicating these locations is provided in Appendix 1. Dust samples are collected monthly and analysed for total deposited dust and deposited lead dust.

#### ***Dust Deposition Gauges D1 (EPL3) to D7 (EPL9) – Results for December 2025***

Total Deposited Dust (g/m <sup>2</sup> .Month)							
Sample Period	D1 (off site)	D2 (off site)	D3 (on site)	D4 (off site)	D5 (on site)	D6 (off site)	D7 (on site)
<b>December 2025</b>	3.9	1.4	1.9	2.1	1.6	13.8	1.9
<b>Annual Rolling Average</b>	1.22	1.28	1.17	2.28	2.80	2.86	1.10
<b>Background (2010)</b>	4.0	3.1	4.3	5.7	-1	5.8	-1

**Note:** “1”= background not available, N/A = not applicable as dust deposition unit is located on site, NS = No sample



**Figure 17: Total deposited dust collected by 7 dust gauges - 12-month overview**

All dust levels recorded by the Dust Gauges in December 2025 were on average higher than the two previous months. The highest dust levels in December were recorded in the D6 Casuarina Ave gauge, an off-site gauge, reaching 13.8 g/m<sup>2</sup>/month. It is also the highest result over the last 12 months. Results for 5 out of 7 Dust Gauges were quite homogeneous, with values around or slightly below 2 g/m<sup>2</sup>/month. D1 and especially D6 sampled noticeably higher levels.

Dust Deposition Gauges that are located off-site must adhere to criteria for annually averaged deposited dust of 4 g/m<sup>2</sup>.month.

Dust suppressant is applied to unsealed areas of the site and roads are frequently watered using water carts to control dust emissions.

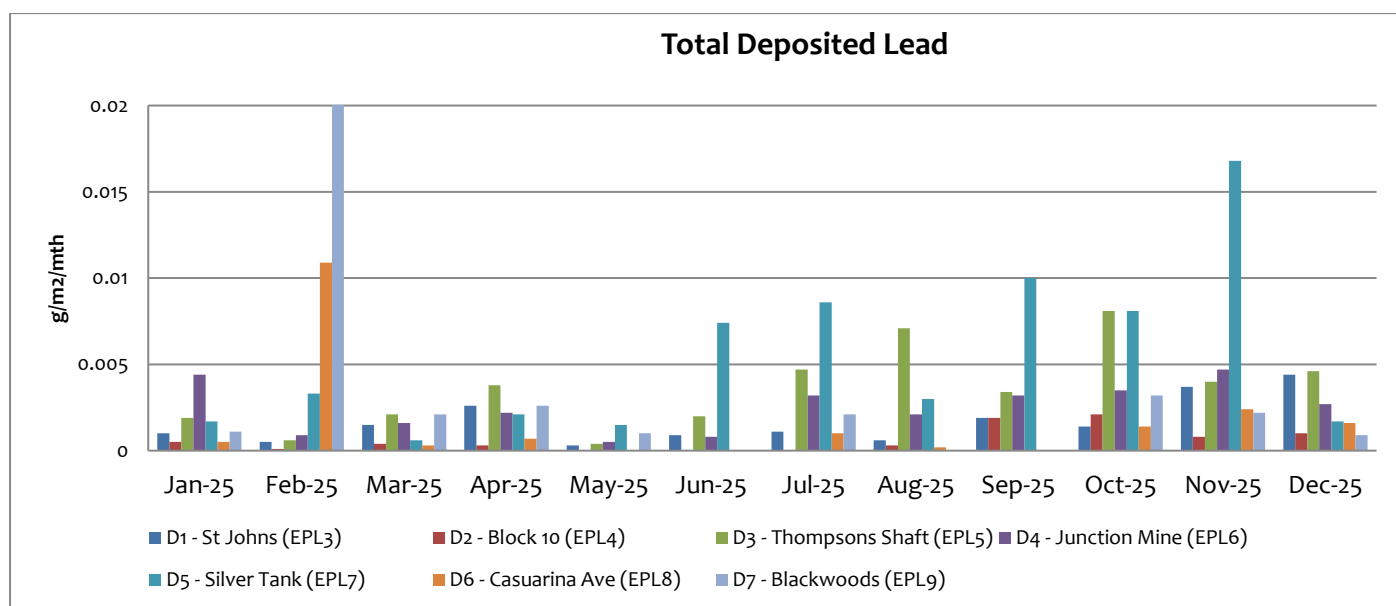
Total Deposited Lead (g/m <sup>2</sup> .Month)							
Sample Period	D1 (off Site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off Site)	D7 (on site)
<b>December 2025</b>	0.0044	0.0010	0.0046	0.0027	0.0017	0.0016	0.0009
<b>Background (2010)</b>	0.0034	0.005	0.005	0.006	-1	0.004	-1

Note: "1"= background not available, NS = No sample

There are no guidelines for deposited lead dust. As shown in Figure 18 below, Lead levels in December 2025 were on average comparable to those of the previous month. They remained significantly lower than the background levels recorded in 2010, except for D1. D3 sampled the maximum value for this month, with a monthly surface concentration of 0.0046 g/m<sup>2</sup>/month. Although D6 sampled unusually high dust levels during this month (see paragraph above), it is worth noting that it did not contain any elevated level of Lead.

The confirmed high value recorded at D7 Blackwoods in February (0.0819 g/m<sup>2</sup>.month) is not displayed properly on figure 18 below due to the choice of y-axis scale, more suitable for the dataset.

Dust suppressant is applied to unsealed areas of the site and roads are frequently watered using water carts to control dust emissions.



**Figure 18: Lead deposited dust collected by 7 dust gauges - 12-month overview**

## 1.4 Ventilation Outlets and Bag House Monitoring

There are two locations to measure pollutants from exhausts or stacks; these include the Primary Ventilation Shaft, measuring pollutants from underground firings, and the Baghouse Stack at the crusher measuring dust. Each are located on site; the Primary Ventilation Shaft is located centrally and to the north of the mine lease and the Primary Crusher Baghouse Stack is located within the area of the processing plant to the east of the lease. Shaft 6 (EPL56) was removed as a monitoring location with the variation of EPL12559 in March 2019 as it became an intake rather than an exhaust in June 2018. A map indicating these locations can be found on the Rasp Mine web site. Samples are collected quarterly and analysed for a number of parameters listed in below. Reference to the item required in the Rasp Mine Environment Protection Licence (EPL) is provided below. Emissions monitoring is conducted quarterly.

The following criteria apply:

### Primary Ventilation Shaft (EPL1)

	Unit	Criteria
<b>Nitrogen Oxides</b>	mg/m <sup>3</sup>	350
<b>Volatile Organic Compounds</b>	mg/m <sup>3</sup>	40

### Primary Ventilation Shaft (EPL1) and Crusher Baghouse (EPL2)

	Unit	Criteria
<b>Total Suspended particles (TSP)</b>	mg/m <sup>3</sup>	20
<b>Type 1 and Type 2<sup>1</sup></b>	mg/m <sup>3</sup>	1

**Note 1:** "Type 1 substance" means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements.

“Type 2 substance” means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements.

***Primary Vent Shaft (EPL1) and Crusher Baghouse (EPL2) Results for December 2025***

The latest round of quarterly emissions monitoring was conducted at the Primary Vent Shaft (EPL1) and the Crusher Baghouse (EPL2) on 16 December 2025. Results were within limits and are provided below.

Parameter	Unit	Primary Vent Shaft (EPL1)	Crusher Baghouse (EPL2)
Dry Gas Density	kg/Nm <sup>3</sup>	1.29	1.29
Moisture	%	1.18	2.52
Molecular weight of stack gases	g/Nm <sup>3</sup>	1,288	1,288
Temperature	°C	24.7	23.0
Nitrogen Oxides	mg/Nm <sup>3</sup>	<2.05	N.A
Volatile Organic Compounds	mg/m <sup>3</sup>	<0.41	NA
Total Suspended particles	mg/Nm <sup>3</sup>	6.09	13.8
Type 1 and Type 2	mg/Nm <sup>3</sup>	0.067	0.47
Velocity	m/sec	15.9	21.4
Volumetric Flowrate (Dry)	Nm <sup>3</sup> /sec	260	8.9

## 2 Noise

### 2.1 Blasting (Vibration and Overpressure)

There are five compliance vibration monitors at various locations measuring for vibration and overpressure from blast firings. These include V1 to V5 which are located on-site and off-site. A map indicating these locations can be found on the Rasp Mine web site. In addition, there are several roving monitors which may be used to monitor vibration and overpressure at locations as required. Monitors operate continuously and are automatically triggered to record when a blast occurs. The following conditions apply as listed in the PA 07\_0018 and EPL 12559:

#### Blasting Criteria (Western Mineralisation and Main Lodes excluding Block 7)

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance (for production and development blasts)
Residence on privately owned land (7am-7pm)	115	5	5% of the total number of blasts over a 12-month period <sup>1</sup>
(7am-7pm)	120	10	0%
(7pm-10pm)	105	-	-
(10pm-7am)	95	-	-
Public Infrastructure	-	100	0%

**Note 1:** Does not apply until completion of Pollution Reduction Program on the EPL at the end of 2018. Applies to EPL criteria in the period for the Annual Return 3 Nov to 2 Nov the following year and to DPE criteria in the reporting period 1 Jul to 30 Jun each year.

#### Blasting Criteria (Block 7)

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance (for production and development blasts)
Residence on privately owned land (7am-7pm)	115	3 (interim)	5% of the total number of blasts over a 12-month period <sup>1</sup>
(7am-7pm)	120	10	0%
(7pm-10pm)	105	-	-
(10pm-7am)	95	-	-
Broken Hill Bowling Club, Italo (Bocce) Club, Heritage Items within CML7	-	50	0%
Perilya Southern Operations	-	100	0%
Public Infrastructure	-	100	0%

**Note 1:** Applies to EPL criteria in the period for the Annual Return 3 Nov to 2 Nov the following year and to DPE criteria in the reporting period 1 Jul to 30 Jun each year.

In addition the following conditions also apply:

- Production blasts may occur between 6.45 am and 7.15 pm on any day
- 1 production blast per day, with 6 per week averaged over a calendar year
- 6 development blasts per day, with 42 per week averaged over a calendar year

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***Blasting Data Summary Results for December 2025 (annual period)***

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**Total Blasts:**

- 0 production blasts occurred before 6.45 am or after 7.15 pm
- The number of Production blasts averaged 1.08 per week over the previous calendar year
- The number of Development blasts averaged 21.54 per week over the previous calendar year

**Western Mineralisation and Main Lodes (excluding Block 7):**

- 3 Blast recorded >5 mm/s
- 0 Blasts recorded >10 mm/s
- 0 development blasts recorded an over pressure level over 95 dBL (10pm to 7am)
- 0 development blasts recorded an over pressure level over 105 dBL (7pm to 10pm)
- 0 Blasts recorded an over pressure level over 115dBL (7am to 7pm)
- 0 Blasts recorded an over pressure level over or 120 dBL at any time
- Percentage of development blasts over 5 mm/sec for the annual period = 0%
- Percentage of production blasts over 5 mm/sec for the annual period = 5%

**Block 7:**

- 0 Blasts recorded >3 mm/s
- 0 Blasts recorded >10 mm/s
- 0 Blasts recorded >50 mm/s at V6
- 0 development blasts recorded an over pressure level over 95 dBL (10pm to 7am)
- 0 development blasts recorded an over pressure level over 105 dBL (7pm to 10pm)
- 0 Blasts recorded an over pressure level over 115 dBL (7am to 7pm)
- 0 Blasts recorded an over pressure level over or 120 dBL at any time
- Percentage of development blasts over 3mm/sec for the annual period = 0%
- Percentage of production blasts over 3mm/sec for the annual period =0%

There have been three production blasts in the Western Mineralisation and Main Lodes producing vibration at monitors over 5 mm/sec for the 12-month period.

There have been no production blasts in Block 7 for the 12-month period.

## **2.2 Noise**

Noise monitoring is undertaken as per the NSW Noise Policy for Industry at a frequency of once per annum. Attended environmental noise monitoring was done during the night period of 3 and 4 December 2025 at 14 monitoring locations. Noise levels from site complied with relevant limits at all monitoring locations during the December 2025 survey.

## 3 Water

### 3.1 Groundwater

There are eighteen sampling locations for groundwater. GW01 (EPL37) to GW16 (EPL52) are piezometers installed at various locations around the mine site and are sampled quarterly. There are also two sampling locations for water pumped from underground mining, Shaft 7 (EPL53) and Kintore Pit (EPL54), which are sampled monthly. A map indicating these locations can be found on the Rasp Mine web site. Groundwater monitoring is scheduled for completion in March, June, September and December. No limits are applied in the EPL to the results from groundwater monitoring. Levels for all parameters are stable.

#### Ground and Mine Water Monitoring Requirements

EPA Identification Number	Frequency	Parameters to be analysed
<b>Shaft 7 EPL53</b>	Monthly	alkalinity (calcium carbonate (CaCO <sub>3</sub> )), cadmium (Cd), calcium (Ca), chloride (Cl), electrical conductivity (EC), iron (Fe), lead Pb), magnesium (Mg), manganese (Mn), pH, sodium (Na), sulphate (SO <sub>4</sub> ), total dissolved solids (TDS) and zinc (Zn)
<b>Kintore Pit (U/G dewatering) EPL54</b>	Monthly	
<b>Piezometers EPL37 (GW01) to EPL52 (GW16)</b>	Quarterly	

#### *Shaft 7 (EPL53) and Kintore Pit (EPL54) Results for December 2025*

Sample Point	pH	EC (µS/cm <sup>2</sup> )	TDS (mg/l)	Alkalinity (CaCO <sub>3</sub> ) (mg/l)	SO <sub>4</sub> (mg/l)	Cl (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
Shaft 7 (EPL53)	No pumping													
Kintore Pit (EPL54)	6.10	13200	14300	8	6070	1660	496	328	1850	2.81	1.33	410	1150	<0.05

#### *Groundwater Bores (EPL37 - EPL52) Results for December 2025*

Sample Point	pH	EC (µS/cm <sup>2</sup> )	TDS (mg/l)	Alkalinity (CaCO <sub>3</sub> ) (mg/l)	SO <sub>4</sub> (mg/l)	Cl (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
GW01 (EPL37)	Bore Dry													
GW02 (EPL38)	Bore Dry													
GW03 (EPL39)	5.79	14100	13400	<1	4890	2910	605	363	2240	0.581	1.43	432	361	0.50
GW04 (EPL40)	6.57	14300	11800	279	4740	2570	642	622	2520	0.0281	0.054	21.7	13.3	<0.05
GW05 (EPL41)	5.97	12900	11600	37	4570	2470	661	438	2270	0.810	0.187	252	147	<0.05

Sample Point	pH	EC (µS/cm <sup>2</sup> )	TDS (mg/l)	Alkalinity (CaCO <sub>3</sub> ) (mg/l)	SO <sub>4</sub> (mg/l)	Cl (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
GW06 (EPL42)	5.80	14400	14100	45	5840	2770	591	490	2460	2.07	0.072	448	304	<0.05
GW07 (EPL43)	5.87	12100	11700	26	4960	1830	563	343	1920	2.37	0.613	338	356	<0.05
GW08 (EPL44)	5.89	10800	10700	14	3830	1900	618	267	1510	2.01	0.340	306	483	<0.05
GW09 (EPL45)	6.64	10800	9250	251	3470	1870	654	477	1470	0.134	<0.001	10.2	3.73	<0.05
GW10 (EPL46)	5.96	13900	13200	85	5560	2590	534	488	2240	3.51	0.015	183	322	<0.05
GW11 (EPL47)	6.08	3170	2850	12	1400	311	310	74	343	1.16	0.096	8.12	53.1	<0.05
GW12 (EPL48)	Bore Dry													
GW13 (EPL49)	Bore Dry													
GW14 (EPL50)	Bore Dry													
GW15 (EPL51)	N.A													
GW16 (EPL52)	Bore Dry													

### 3.2 Surface Water Sample Record

There are seven sampling locations for surface water, these include surface water basins located on the mine lease to capture and retain rainfall and two locations up and down stream of an ephemeral creek located south of the mine lease boundary. A map indicating these locations can be found in Appendix 1. Based on historical data, sampling is most likely to be undertaken in October (highest rainfall month as recorded by Bureau of Meteorology) and April.

#### Surface Water Monitoring Requirements

Description	Frequency	Parameters to be Analysed
Federation Way Culvert EPL29/S31-1	2 x per year, six months apart	
Ryan Street Dam EPL31/S49	2 x per year, six months apart	cadmium (Cd), chloride (Cl), electrical conductivity (EC), lead Pb), manganese (Mn), pH, sodium (Na), sulphate (SO <sub>4</sub> ), total dissolved solids (TDS) and zinc (Zn)
Adjacent Olive Grove EPL32/S1A	2 x per year, six months apart	
Adjacent Bowls Club EPL33 /S9-B2	2 x per year, six months apart	
Horwood Dam EPL34/S34	2 x per year, six months apart	
Upstream Bonanza St EPL35	2 x per year, six months apart	
Downstream Sydney Rd EPL36	2 x per year, six months apart	

#### *Surface Water Results for December 2025*

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No surface water samples were collected in December.

## 4 Weather Data

The weather station continuously monitors the following parameters as per Point 55 of the Environmental Protection Licence.

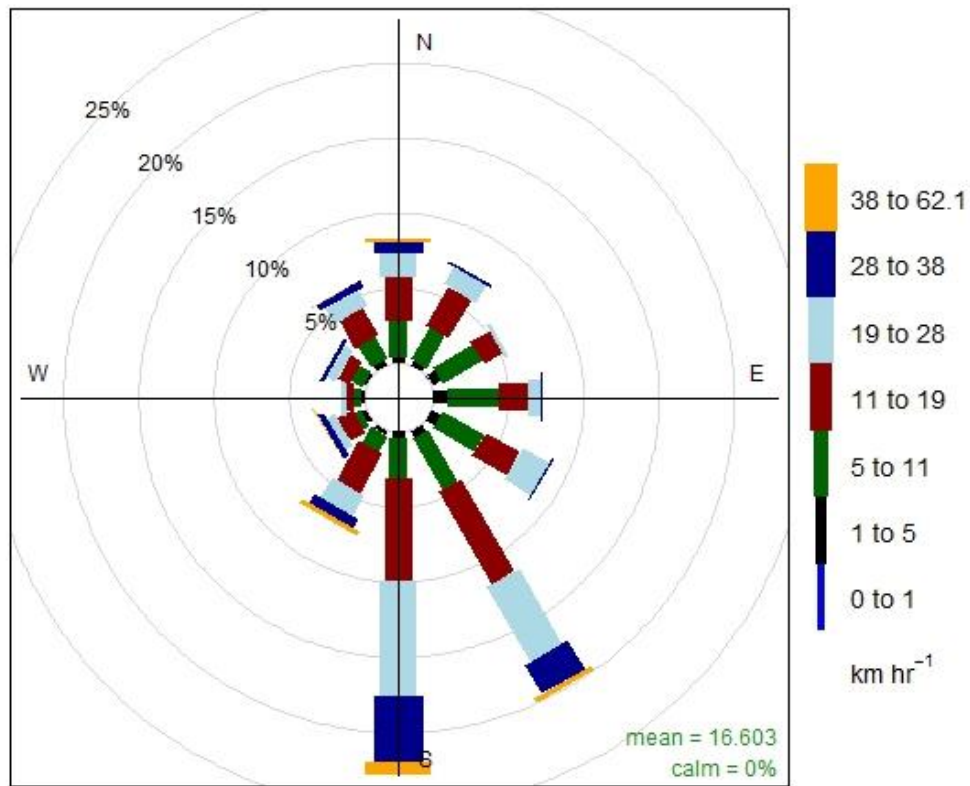
The following parameters are required to be recorded each month as listed in the EPL 12559:

### Rasp Mine Weather Station (EPL55) Monitoring Requirements

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 10 metres	AM-4	degrees Celsius	15 minutes	Continuous
Wind Direction at 10 metres	AM-4	degrees in a clockwise direction from True North	15 minutes	Continuous
Wind Speed at 10 metres	AM-4	metres per second	15 minutes	Continuous
Rainfall	AM-4	millimetres	1 hour	Continuous
Sigma theta	AM-2 & AM-4	degrees	15 minutes	Continuous

The wind rose provided below indicates that wind directions were very scattered for the month of December. The predominant wind direction was from the South. Strong winds with speed above 29km/h (fresh breeze or stronger) accounted for less than 10% of all winds during this month. The strongest wind was measured on 10 December. It reached a maximum of 66.7km/h (gale).

**BHO Pty Ltd - Wind Rose December 2025**



**Frequency of counts by wind direction (%)**

**Figure 19: Wind rose for December 2025**

*Weather Data Summary for December 2025*

Date	Temperature @ 10m (°C)		Wind Speed @ 10m (km/hr)		Predominant Wind Direction @ 10m		Rainfall (mm)
	Min	Max	Min	Max	Cardinal	Degree	Total
1-Dec-25	13.1	19.9	0.5	52.7	225	SW	0.06
2-Dec-25	9.2	23.3	1.2	26.8	184	S	0.03
3-Dec-25	17.1	30.3	1.2	21.4	9	N	0
4-Dec-25	22.3	34.6	1.4	39.7	345	NNW	0.01
5-Dec-25	27	37.5	3.6	54.3	339	NNW	0
6-Dec-25	19.1	34.2	3.1	48.4	195	SSW	0
7-Dec-25	11.6	23.9	0.4	54.1	166	SSE	0
8-Dec-25	16.4	32	1	19.3	61	ENE	0
9-Dec-25	19.7	33.7	0.6	26.7	162	SSE	0
10-Dec-25	23.9	34.8	1.7	66.7	134	SE	0
11-Dec-25	20.3	32.6	1.3	33	130	SE	0
12-Dec-25	23.3	35.8	0.3	29.3	45	NE	0
13-Dec-25	23.2	31.6	0.5	28.5	80	E	2.05
14-Dec-25	15.1	28.8	2.2	46.6	186	S	0
15-Dec-25	12.5	23.7	3.8	46.1	167	SSE	0
16-Dec-25	15.5	28	1.5	35.8	139	SE	0
17-Dec-25	20.6	36.6	0.7	24.6	60	ENE	0
18-Dec-25	27.5	37.3	1	43.3	359	N	0
19-Dec-25	25.5	36.9	2.7	46.7	334	NNW	0.22
20-Dec-25	23.4	35.5	0.4	33	32	NNE	5.88
21-Dec-25	19.8	27.9	2.9	47.7	330	NNW	7.96
22-Dec-25	12.2	24.3	0.7	38.1	174	S	0
23-Dec-25	14.4	25.9	1.5	38	171	S	0
24-Dec-25	14.4	27.2	1.9	36	178	S	0
25-Dec-25	13.3	24.3	5.5	45.6	167	SSE	0
26-Dec-25	14.4	24.6	0.5	46.6	157	SSE	0
27-Dec-25	15.5	28.1	1.2	33.4	141	SE	0
28-Dec-25	20.5	32.3	0.4	27.5	112	ESE	0.08
29-Dec-25	24	34.7	0.6	25.1	64	ENE	0
30-Dec-25	26.6	36.4	0.7	53.7	168	SSE	0
31-Dec-25	14.9	28.2	5.7	49.8	179	S	0

There was a total rainfall of 16.29 mm in December 2025.

## 5 Data Log

Sample	Result Received
Hi-Volume Samples	27-01-2026
TEOM	30-01-2026
Dust Deposition	02-02-2026
Vents & Bag House	28-01-2026
Noise	13-01-2026
Water	02-01-2026
Blast vibration and overpressure	01-01-2026
Weather	01-01-2026
Date posted to web site	27-02-2026

## 6 Correction Log

No corrections.

**7 Appendix 1 – Monitoring Locations**

