



Rasp Mine  
Monthly Environmental Monitoring Report  
April 2018



## INTRODUCTION

Broken Hill Operations Pty Ltd (BHOP) [a wholly owned subsidiary of CBH Resources Limited (CBH)] 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 granted 31 January 2011, under Part3A of the Environmental Planning and Assessment Act 1979 (EP&A Act).

As the holder of an Environmental Protection Licence 12559 (EPL), 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 (PA). These documents can be found on the Rasp Mine web site.

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## 1 Air Quality

The following criteria as listed in the Project Approval (MOD46 September 2017) apply to air quality monitoring:

### 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

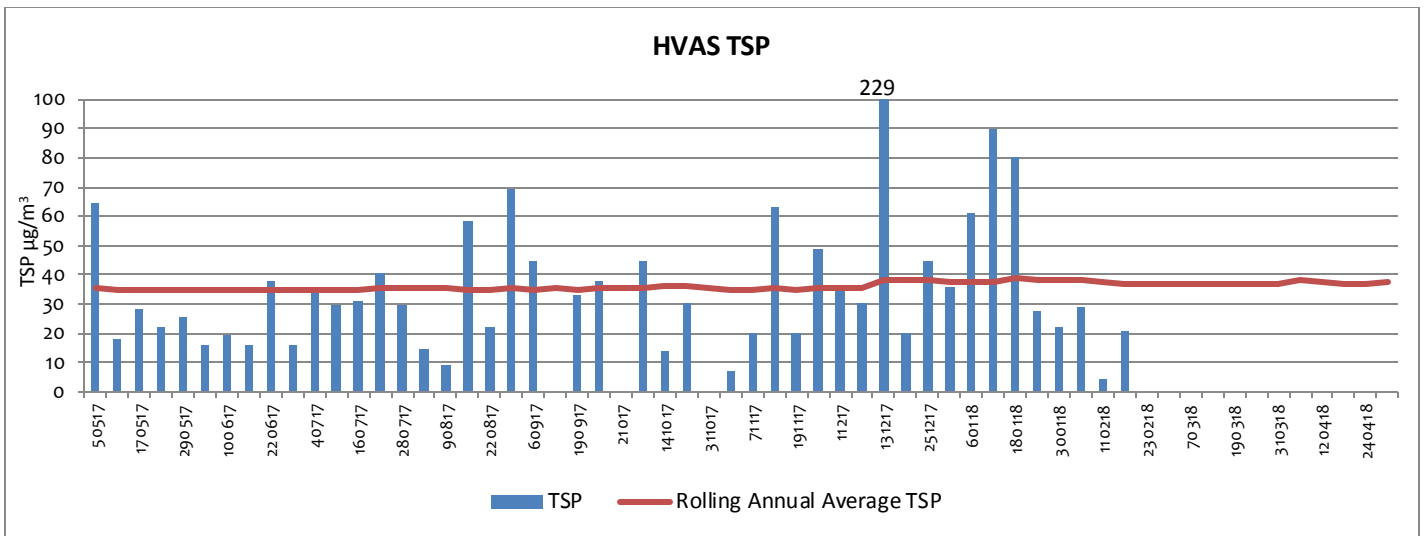
### 1.1 High Volume Air Samplers

There are three 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) is located adjacent to and north of Blackwood Pit. A map indicating these locations can be found on the Rasp Mine web site. HVAS samples 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.

#### *HVAS (EPL10) - Silver Tank (On Site) Results for April*

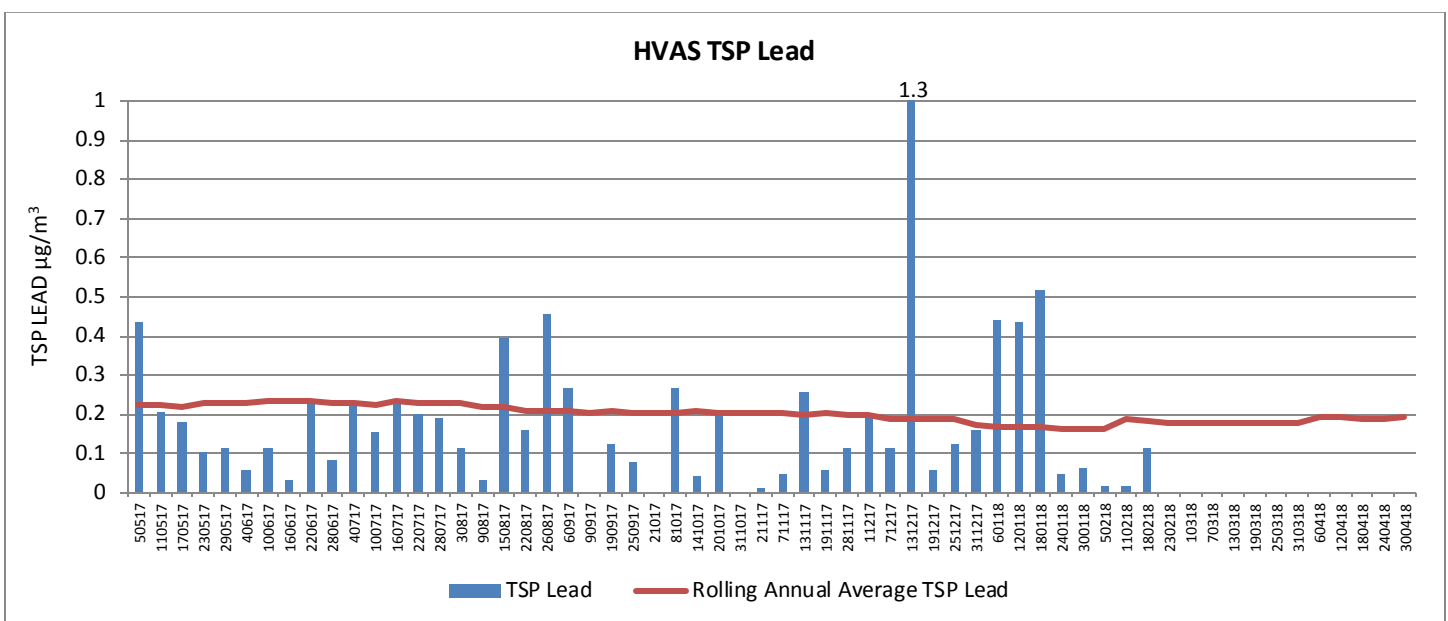
DATE	TSP (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )
06-04-18	SD <sup>1</sup>	SD <sup>1</sup>
12-04-18	SD <sup>1</sup>	SD <sup>1</sup>
18-04-18	SD <sup>1</sup>	SD <sup>1</sup>
24-04-18	SD <sup>1</sup>	SD <sup>1</sup>
30-04-18	SD <sup>1</sup>	SD <sup>1</sup>

Note <sup>1</sup>: SD – Sample discarded. Unit fault identified and under investigation – EPA notified



The HVAS monitoring unit is located on the Rasp Mine and limit criteria do not apply at this point, criteria apply at the closest residential location. This unit did not operate correctly during April, and a service technician from the equipment supplier attended site in April to troubleshoot the unit operation. Although it was determined that the flowrate for this unit was well out of range, the cause or fault could not be identified. The technician concluded that this increase in flowrate would cause the HVAS to experience a higher than normal pressure increase across the filter. As a result the instrument sensed a blockage of the air passing through the filter and it struggled to establish and maintain a sufficient flow rate across the filter. Consequently the unit assumed premature sampling termination and recorded error messages. The unit was repaired, calibrated and tested, and the technician declared the unit to be operating in optimal condition.

Although HVAS was not working correctly during April, HVAS1, which is located adjacent to this unit (within 1 m), was operating correctly and did not record any unexpected increases in dust levels during this period. (HVAS1 measures in particle size  $\text{PM}_{10}$  which is a subset of TSP which is measured at HVAS.) The annual average for TSP (calculated on a reduced number of samples) to April was  $37 \mu\text{g}/\text{m}^3$ .



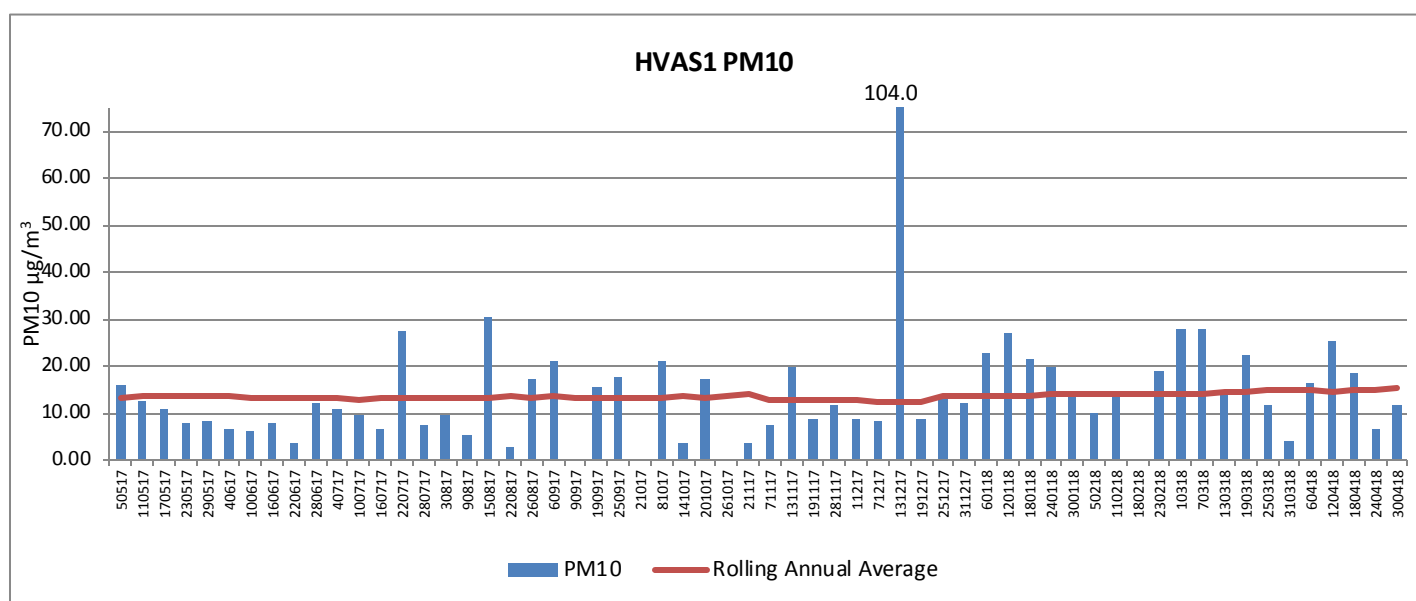


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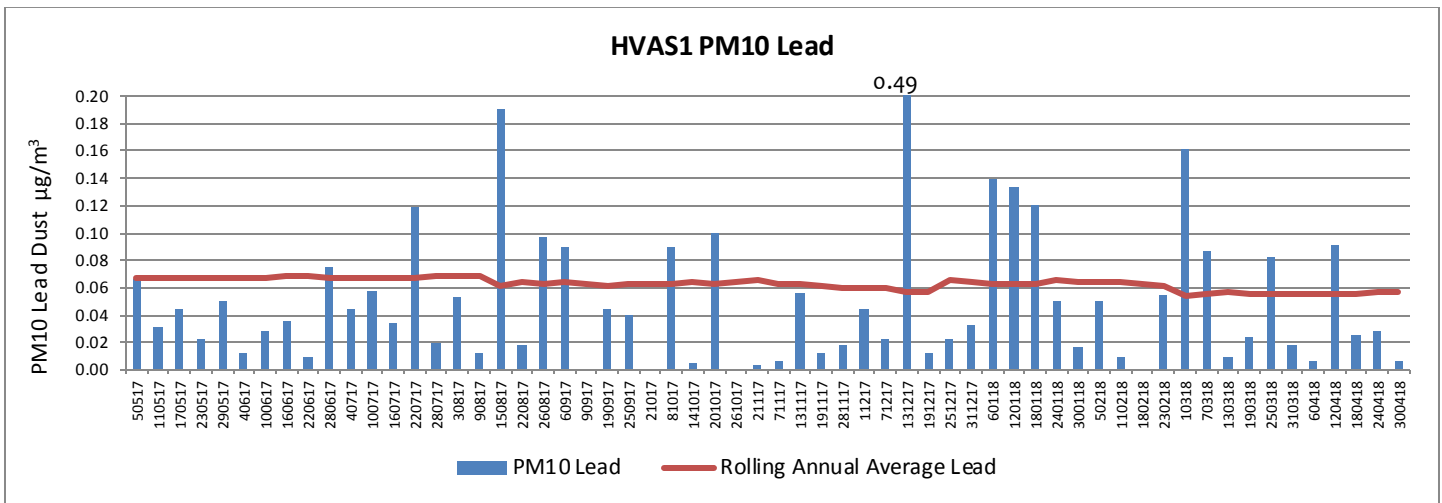
Guidelines for air quality are provided by the EPA, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, 2016*. Although the HVA5 was not working correctly during April, HVA51 which is located adjacent to this unit (within 1 m), was operating correctly and did not record any unexpected increase in PM<sub>10</sub> lead dust levels during this period. Due to the malfunction of HVA5 as described above, the annual average for lead dust (calculated on a reduced number of samples) to April was 0.20 µg/m<sup>3</sup>.

### HVA51 (EPL11) - Silver Tank (On Site) Results for April

DATE	PM10 (µg/m <sup>3</sup> )	PM10 Lead (µg/m <sup>3</sup> )
06-04-18	16.30	0.01
12-04-18	25.40	0.09
18-04-18	18.50	0.03
24-04-18	6.70	0.03
30-04-18	11.60	0.01



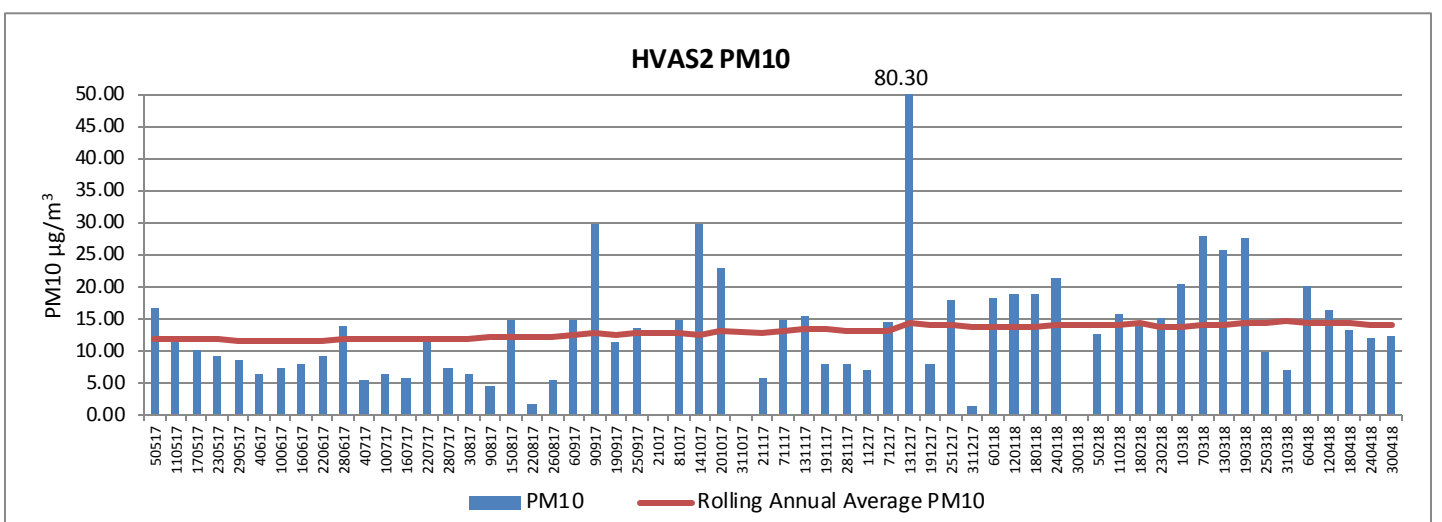
The HVA51 monitoring unit is located on the Rasp Mine and the limit criteria do not apply at this point, criteria apply at the closest residential location. The recorded annual average for PM<sub>10</sub> to April is 15.3 µg/m<sup>3</sup> which is below the PM<sub>10</sub> annual average criterion of 25 µg/m<sup>3</sup> required at the nearest residential location. Overall the trend for PM<sub>10</sub> at this location remains consistent with the previous 12 months.



There is no guideline or criteria for assessing PM<sub>10</sub> lead dust; the trend for lead dust at this location remains consistent with the previous 12 months.

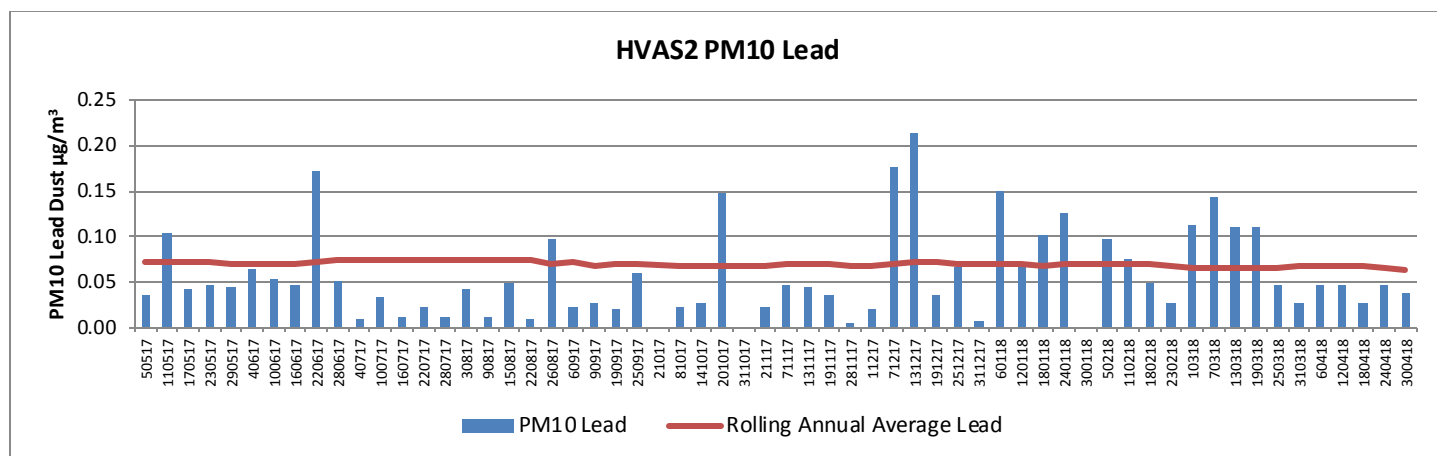
## ***HVAS 2 (EPL12) - Blackwood Pit (On Site) Results for April***

DATE	PM10 ( $\mu\text{g}/\text{m}^3$ )	Lead ( $\mu\text{g}/\text{m}^3$ )
06-04-18	20.20	0.046
12-04-18	16.60	0.048
18-04-18	13.40	0.028
24-04-18	12.10	0.047
30-04-18	12.40	0.038



The HVAS2 monitoring unit is located on the Rasp Mine and limit criteria do not apply at this point, criteria apply at the closest residential location. The recorded annual average PM<sub>10</sub> to April is 14  $\mu\text{g}/\text{m}^3$  which is below the PM<sub>10</sub> annual average criterion 25  $\mu\text{g}/\text{m}^3$  required at the nearest residential location.

Overall the trend for PM<sub>10</sub> at this location remains consistent with the previous 12 months.



There is no guideline for assessing PM<sub>10</sub> lead dust. The recorded annual average PM<sub>10</sub> lead to April is 0.06  $\mu\text{g}/\text{m}^3$  and the trend for lead dust at this location remains consistent with the previous 12 months.

## 1.2 Tapered Element Oscillating Microbalance Sampling (TEOM)

There are two Tapered Element Oscillating Microbalance (TEOM) sampling 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 on the Rasp Mine web site. TEOM1 and TEOM2 operate continuously and sample for particulate matter less than 10 microns (PM<sub>10</sub>) in size.

### *TEOM1 (EPL13) (Off Site) and TEOM2 (EPL14) (On Site) Results for April*

Particulate Matter <10 Microns 24Hr Average				
Date	TEOM 1 ( $\mu\text{g}/\text{m}^3$ )	Compliant with 50 $\mu\text{g}/\text{m}^3$ 24hr average?	TEOM 2 ( $\mu\text{g}/\text{m}^3$ )	Compliant with 50 $\mu\text{g}/\text{m}^3$ 24hr average?
01-04-18	12.12	Y	12.18	Y
02-04-18	17.69	Y	22.00	Y
03-04-18	14.59	Y	20.41	Y
04-04-18	13.92	Y	18.49	Y
05-04-18	18.17	Y	26.66	Y
06-04-18	22.23	Y	31.00	Y
07-04-18	23.82	Y	19.73	Y
08-04-18	20.73	Y	19.97	Y
09-04-18	19.53	Y	19.54	Y
10-04-18	21.03	Y	20.69	Y
11-04-18	25.15	Y	24.14	Y
12-04-18	33.10	Y	34.58	Y
13-04-18	34.95	Y	40.30	Y
14-04-18	97.37	Y <sup>1</sup>	106.80	Y <sup>1</sup>
15-04-18	32.58	Y	39.09	Y
16-04-18	9.48	Y	9.29	Y



17-04-18	9.22	Y	11.28	Y
18-04-18	13.99	Y	15.54	Y
19-04-18	19.54	Y	18.10	Y
20-04-18	18.36	Y	Note 2	Note 2
21-04-18	21.51	Y	Note 2	Note 2
22-04-18	23.54	Y	Note 2	Note 2
23-04-18	18.25	Y	Note 2	Note 2
24-04-18	22.25	Y	Note 2	Note 2
25-04-18	19.52	Y	Note 2	Note 2
26-04-18	12.89	Y	Note 2	Note 2
27-04-18	12.41	Y	Note 2	Note 2
28-04-18	19.17	Y	Note 2	Note 2
29-04-18	27.51	Y	Note 2	Note 2
30-04-18	21.95	Y	Note 2	Note 2

Note 1 = Monitoring results affected by general dust storm and high winds of up to 54 km/h.

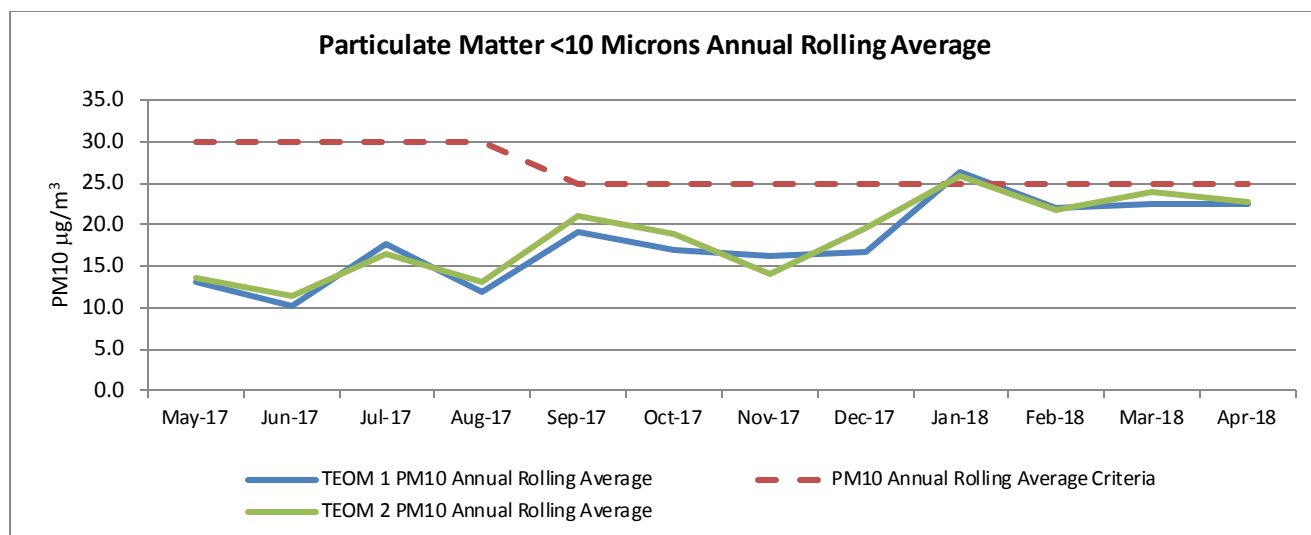
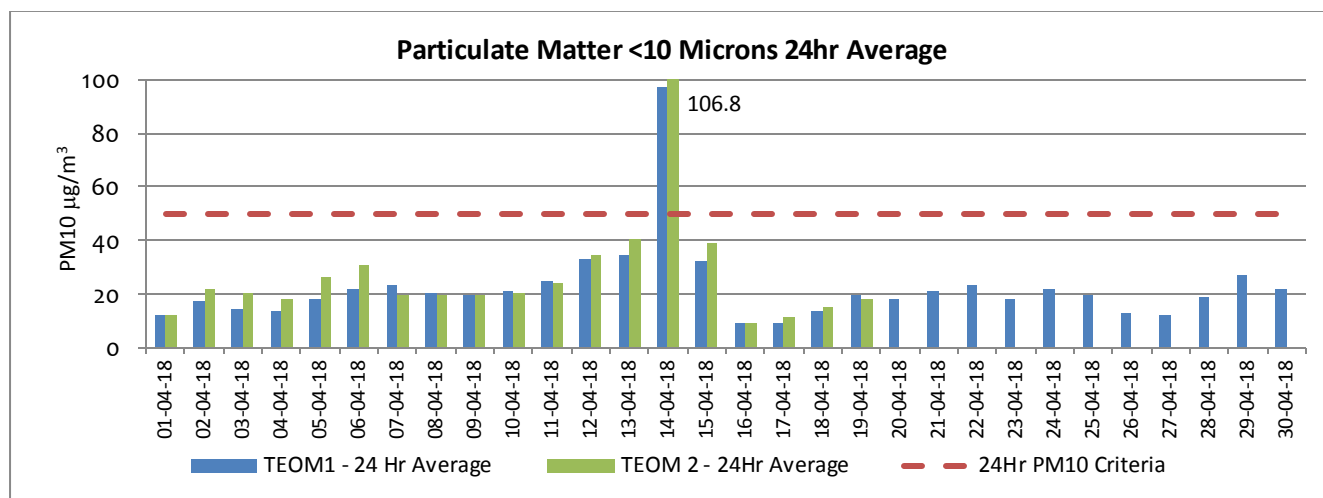
Note 2 = Technical problem with memory download of TEOM2 unit.

The TEOM1 monitoring unit is located off-site from the Rasp Mine and the criteria as listed in the PA apply at this point. There are two criteria listed for PM<sub>10</sub>, a 24-hour average and an annual average. The highest PM<sub>10</sub> 24-hour average recorded at TEOM1 in April was 97.37 µg/m<sup>3</sup> on 14 April as a result of a dust storm throughout Broken Hill, the criteria do not apply to storm events. The Rasp Mine weather station recorded winds of 54 km/h whilst the BOM weather station recorded winds of 65 km/h. The annual average PM<sub>10</sub> to April was 22.4 µg/m<sup>3</sup>.

The TEOM2 monitoring unit is located on the Rasp Mine and limit criteria do not apply at this point, criteria apply to the closest residential location. The highest PM<sub>10</sub> 24-hour average recorded in April was 106.8 µg/m<sup>3</sup> on 14 April as a result of a dust storm throughout Broken Hill, the criteria do not apply to storm events. The annual average PM<sub>10</sub> to April was 22.6 µg/m<sup>3</sup> (calculated on a reduced number of samples for April).

The TEOM2 unit experienced technical issues from 20 April continuing for the rest of the month and into May, although the unit was operational no data could be retrieved. This was reported to the EPA. Following investigation by a service technician it was found that the flash card to which the monitoring data is written malfunctioned and the process for writing data to the memory card became corrupted. HVAS2 which also monitors for PM<sub>10</sub> is located adjacent to TEOM2 and did not record any unexpected increases in dust levels during this period.





**Note 1:** Criteria change to 25µg/m<sup>3</sup> in September as per PA MOD4.

### 1.3 Dust Deposition Sampling

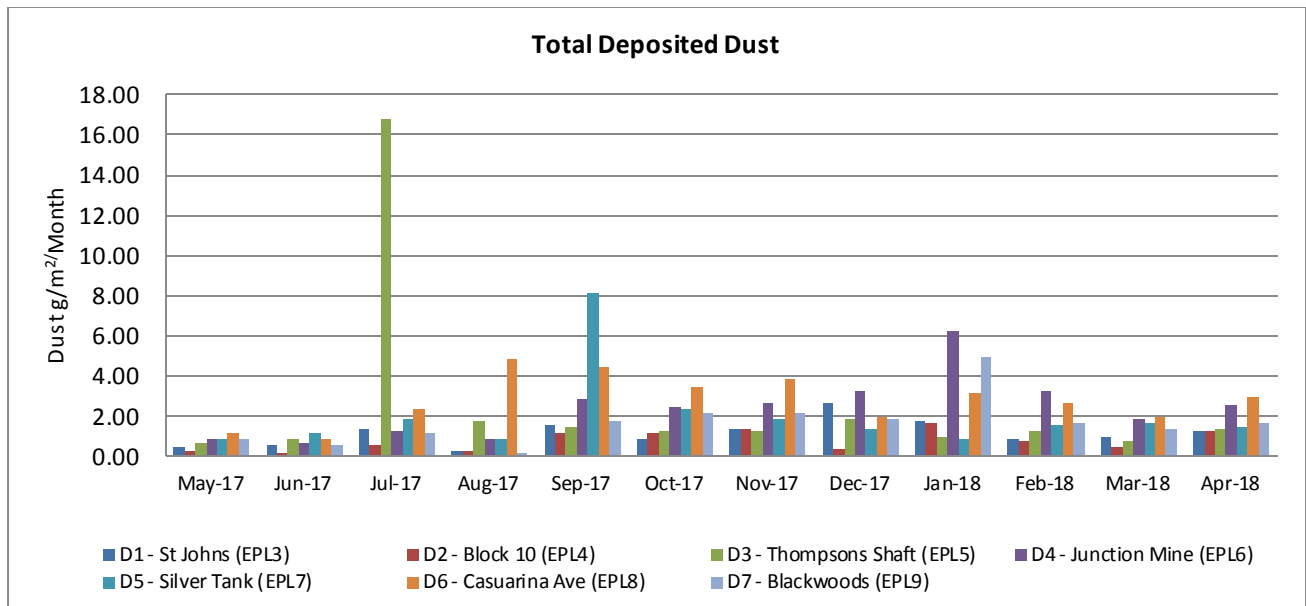
There are seven dust deposition gauges to measure ambient air quality at the Rasp Mine – D1 to D7. D1 and D6 are located off-site, D1 near the St Johns training facility north of the Rasp Mine and D6 in Casuarina Avenue south of the Rasp Mine. D2 to D5 and D7 are located on the mine lease in various locations. A map indicating these locations can be found on the Rasp Mine web site. 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 April*

Total Deposited Dust (g/m <sup>2</sup> /Month)							
Date	D1 (off site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off site)	D7 (on site)
April 2018	1.30	1.30	1.40	2.60	1.50	3.00	1.70
Background (2010)	4.0	3.1	4.3	5.7	1	5.8	1
Compliant?	Y	N/A	N/A	N/A	N/A	Y	N/A

Note: "1" = background not available

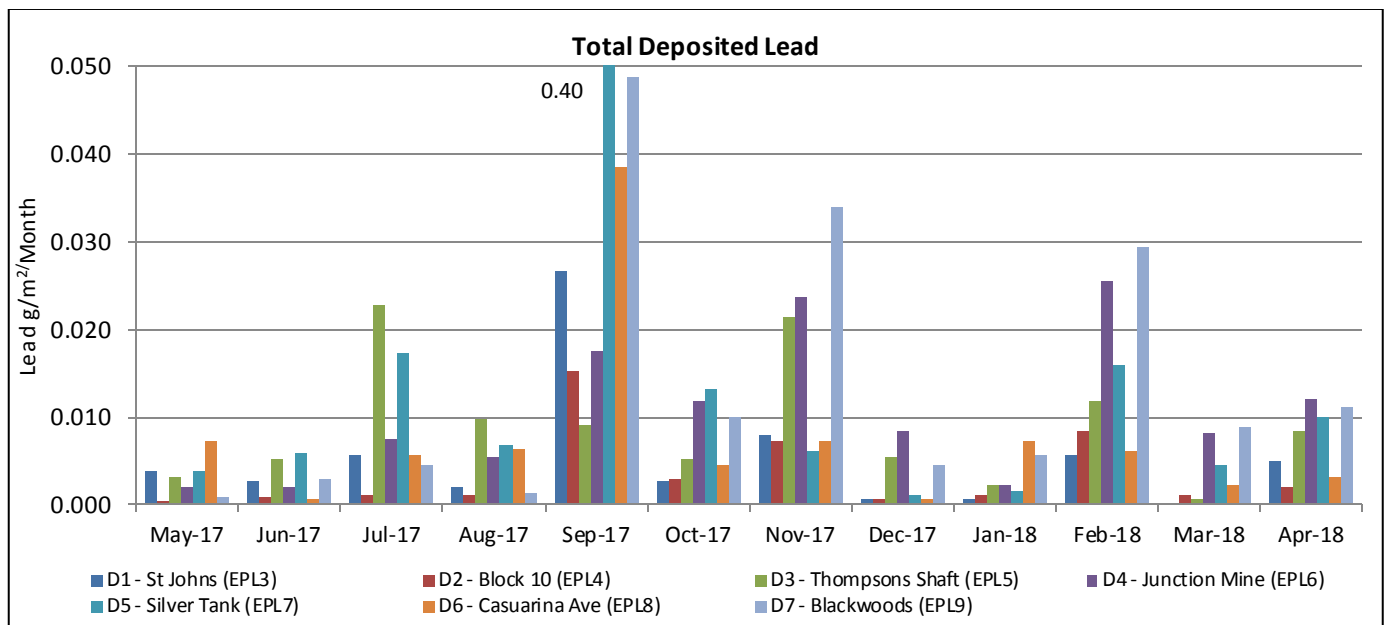
N/A = not applicable as dust deposition unit is located on site



The Rasp Mine is in compliance with criteria.

Total Deposited Lead (g/m <sup>2</sup> /Month)							
Date	D1 (off Site)	D2 (on site)	D3 (on site)	D4 (on site)	D5 (on site)	D6 (off Site)	D7 (on site)
April 2018	0.005	0.002	0.008	0.012	0.010	0.003	0.011
Background (2010)	0.0034	0.005	0.005	0.006	- <sup>1</sup>	0.004	- <sup>1</sup>

Note: "<sup>1</sup>" = background not available



There are no guidelines or criteria for deposited lead dust. The results are consistent with previous months.

## 1.4 Ventilation Outlets and Bag House Monitoring

There are three locations to measure pollutants from exhausts or stacks, these include the Primary Ventilation Shaft and Shaft 6, both measuring pollutants from underground firings, and the Baghouse Stack at the crusher measuring dust. All are located on site; the Primary Ventilation Shaft is located centrally and to the north of the mine lease,



Shaft 6 is located centrally within the lease and the Primary Crusher Baghouse Stack is located within the area of the processing plant to the east of the lease. A map indicating these locations can be found on the Rasp Mine web site. Samples are collected quarterly and analysed for a number parameters listed in below. Reference to the item required in the Rasp Mine EPL is included below.

Quarterly sampling is undertaken in March, June, September and December.

The following criteria apply:

**Primary Ventilation Shaft (EPL1) and Shaft 6 (EPL56)**

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

**Primary Ventilation Shaft (EPL1), Shaft 6 (EPL56) and Crusher Baghouse (EPL2)**

	Unit	Criteria
Total Suspended particles	mg/m <sup>3</sup>	20
Type 1 and Type 2 substances <sup>1</sup>	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), Crusher Baghouse (EPL2) and Vent Shaft 6 (EPL56) Results for April***

There are no results for April, sampling is scheduled for June 2018.

## 2 Noise

### 2.1 Blasting (Vibration and Overpressure)

There are 6 vibration monitors at various locations to measure for vibration and overpressure from blast firings. These include V1 to V5 which are located off-site and V6 which is located on-site near Shaft 4. A map indicating these locations can be found on the Rasp Mine web site. In addition there are 2 roving monitors, which may be used to monitor vibration and overpressure at particular locations as required. Monitors operate continuously and are automatically triggered when a blast occurs. The following conditions apply as listed in the PA and EPL:-

**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, Italio (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 PA 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

### Blasting Data Summary Results for April

#### Total Blasts:

- 0 production blasts occurred before 6.45 am or after 7.15 pm
- Production blasts averaged 4.8 per week over the previous calendar year
- Development blasts averaged 34.5 per week over the previous calendar year

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

- 1 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 = 0% (1 May 2017 until 30 April 2018)
- Percentage of production blasts over 5 mm/sec = 5.0% (1 May 2017 until 30 April 2018)

Rasp Mine is in compliance with all listed criteria.

#### 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)
- Percentage of development blasts over 3mm/sec = 0% (1 May 2017 to 30 April 2018)
- Percentage of production blasts over 3mm/sec = 7.2% (1 May 2017 to 30 April 2018) (criteria does not apply in this period as not a regulator reporting period)

There was no blasting in Block 7 during April. However, during the last 12 months 5 blasts in Block 7 have exceeded 3 mm/s - 3.54 (Sept), 3.07 (Dec), 3.1 (Dec), 3.1 (Jan) and 3.45 (Jan). Mining of Block 7 has now reduced and due to the decreasing number of blasts, the rolling 12 month average will continue to increase until the end of the year. All measures are taken to reduce the size of the production blasts.

## 2.2 Noise

Noise monitoring is undertaken as per the NSW Noise Policy for Industry at a frequency of once per annum. A noise assessment was conducted in November 2017, and is next due in Q4 2018.

## 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 April, June, September and January. No limits are applied in the EPL or PA to the results from groundwater monitoring.

#### Groundwater Monitoring Requirements

EPA Identification Number	Frequency	Parameters to be analysed
Shaft 7 EPL53	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)
Kintore Pit (U/G dewatering) EPL54	Monthly	
Piezometers EPL37 (GW01) to EPL52 (GW16)	Quarterly	

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

Sample Point	pH	EC (µS/cm)	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)	K (mg/l)	Cd (mg/l)	Pb (mg/l)	Mn (mg/l)	Zn (mg/l)	Fe (mg/l)
Shaft 7 (EPL53)	6.6	12700	13300	13	5250	1420	509	314	1540	<sup>1</sup>	1.88	2.94	310	799	1.25
Kintore Pit (EPL54)	6.24	12300	13330	6	5250	1290	481	263	1400	<sup>1</sup>	2.28	3.12	289	1040	6.07

Note 1: Potassium not reported



### **Groundwater Bores (EPL37 - 52) Results for April**

There are no results for April, sampling is scheduled for June 2018.

### **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 on the Rasp Mine web site. Sampling is 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	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)
Ryan Street Dam EPL31/S49	2 x per year, six months apart	
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/Horwood Dam	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 Monitoring Results for April**

Sample Point	Cd (mg/l)	Cl (mg/l)	EC (µS/cm <sup>2</sup> )	Pb (mg/l)	Mn (mg/l)	pH	Na (mg/l)	SO <sub>4</sub> (mg/l)	TDS (mg/l)	Zn (mg/l)
EPL29/S31-1	Sample could not be taken due to dry conditions									
EPL31/S49	Sample could not be taken due to dry conditions									
EPL32/S1A	Sample could not be taken due to dry conditions									
EPL33/S9-B2	Sample could not be taken due to dry conditions									
EPL34/Horwood Dam	Sample could not be taken due to dry conditions (water level below 20% and therefore not representative)									
EPL35 Upstream	Sample could not be taken due to dry conditions									
EPL36 Downstream	Sample could not be taken due to dry conditions									

Sampling was undertaken on the 5 April however all areas were dry. Due to the ephemeral nature of the surface water bodies the sample frequency of six months apart can be difficult to achieve. There has been little to no rain recorded at the Rasp Mine weather station since the previous sampling in October 2017. Results have been affected by the recent dry conditions generally throughout Broken Hill and at the Mine site. Rainfall recorded at the Rasp Mine weather station between January and April 2018 was 1.3 mm.



## 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

**Note:** The onsite weather station currently does not report Sigma theta.

### *Weather Data Summary for April*

Date	Temperature @ 10m (°C)		Wind Speed @ 10m (m/s)		Predominant wind dir @ 10m (deg)		Rainfall
	Min	Max	Min	Max	Cardinal	Degree	
01-04-18	19.2	32.1	0.1	6.6	ENE	17	0.00
02-04-18	17.0	23.6	2.3	12.9	South	81	0.00
03-04-18	11.8	24.3	1.1	10.9	SSE	44	0.00
04-04-18	11.8	26.5	0.1	6.6	South	44	0.00
05-04-18	15.9	28.0	0.3	7.4	South	45	0.00
06-04-18	12.1	25.9	1.2	7.7	SSE	47	0.00
07-04-18	16.0	30.6	0.3	6.8	East	23	0.00
08-04-18	21.7	32.8	0.3	7.5	North	27	0.00
09-04-18	23.3	33.7	0.1	7.9	NNW	27	0.00
10-04-18	25.7	35.2	0.2	9.7	NNW	39	0.00
11-04-18	26.0	34.6	1.0	13.5	North	66	0.00
12-04-18	22.9	32.2	0.3	12.8	North	21	0.00
13-04-18	17.6	28.0	0.5	15.0	NW	20	0.00
14-04-18	13.0	22.5	0.9	14.2	WSW	28	0.00
15-04-18	14.1	22.6	0.5	10.8	West	33	0.00
16-04-18	15.4	23.8	0.6	6.5	SW	31	0.00
17-04-18	12.3	22.2	1.0	7.7	South	42	0.00



<b>18-04-18</b>	13.2	24.4	0.2	5.2	ENE	24	0.00
<b>19-04-18</b>	17.4	26.8	0.3	6.2	East	20	0.00
<b>20-04-18</b>	18.9	27.3	0.3	7.0	SSE	22	0.00
<b>21-04-18</b>	20.3	27.3	0.8	8.6	SE	25	0.00
<b>22-04-18</b>	20.2	29.4	0.1	6.9	ENE	21	0.00
<b>23-04-18</b>	21.4	30.2	0.2	7.6	North	32	0.00
<b>24-04-18</b>	21.2	28.1	0.1	9.1	North	29	0.00
<b>25-04-18</b>	17.0	25.2	0.0	11.6	SSW	20	0.64
<b>26-04-18</b>	13.7	21.1	0.1	9.3	SSE	47	0.00
<b>27-04-18</b>	10.5	20.4	0.5	8.5	South	29	0.00
<b>28-04-18</b>	10.8	21.4	0.6	9.0	SSE	41	0.00
<b>29-04-18</b>	11.4	22.2	0.1	7.1	SSE	38	0.00
<b>30-04-18</b>	10.5	21.3	0.8	8.3	SE	46	0.00

## 5 Data Log

Sample	Result Received
Hi Volume Samples	24-05-2018
TEOM	23-05-2018
<b>Dust Deposition</b>	<b>29-05-2018</b>
Vents & BagHouse	Not Scheduled for April
Water	17-04-2018
<b>Blast vibration and overpressure</b>	22-05-2018
Weather	22-05-2018
Date posted to web site	18-06-2018

## 6 Correction Log

There are no corrections to the previous reports.