



**Heron Resources Limited
Tarago Operations Pty Limited**

Woodlawn Mine

SML 20

Summary of Environmental Monitoring Data

Environmental Protection Licence Number 20821

Project Approval 07_0143MOD2

Record Update – 31 March 2019



Table of Contents

1. Introduction	1
1.1 Introduction	1
1.2 Explanation of units of measurement	2
1.3 Abbreviations	2
<hr/>	
2. Meteorological Monitoring	3
3. Air Quality Monitoring	6
3.1 Depositional Dust	6
3.2 Atmospheric dust – particulate matter	8
<hr/>	
4. Noise Monitoring	13
5. Blasting	14
6. Complaints	18
Appendix A – Historical deposition dust record	19
Appendix B – Daily weather statistics –	20
March 2019	20

Figures

Figure 1. Prevailing wind direction (percentage for month) January – March 2019	5
Figure 2. Monthly dust deposition gauge results	7
Figure 3. Annual rolling average for insoluble solids (g/m ² /month)	7
Figure 4. PM ₁₀ and TSP raw data results	11
Figure 5. PM₁₀ and TSP annual rolling average results	11

Tables

Table 1. Licence information	1
Table 2. Supporting information of EPL monitoring requirements	2
Table 3. Summary of weather conditions for previous 3 months (January – March 2019) ...	3
Table 4. Depositional dust (g/m ² /month - insoluble solids) recorded since May 2017	6
Table 5. Deposited dust limits	8
Table 6. Background deposited dust values for Woodlawn (Jan 2015 – Sep 2017)	8
Table 7. Average deposited dust values since commencement of construction (Sep 2017 – Feb 2019)	8
Table 8. Raw results for PM ₁₀ and TSP	9
Table 9. TSP and PM ₁₀ limits	12
Table 10. Noise criteria (dB(A))	13
Table 11. Monitoring locations for noise monitoring	13
Table 12. EPL & Project Approval limits for airblast and ground vibration	14

Table 13. Blast Monitoring Results	14
Table 14. Blast monitoring south west boundary SML 1-25 Mar January 2019	15
Table 15. Complaints register.....	18

1. Introduction

1.1 Introduction

Tarago Operations Pty Ltd, a wholly owned subsidiary of Heron Resources Limited, holds Environment Protection Licence 20821 (EPL 20821) issued by the Environment Protection Agency (EPA) under the Protection of the Environment operations Act 1997 (the Act) and operates under the conditions of Project Approval 07_0143MOD2 granted by the NSW Department of Planning and Infrastructure for the Woodlawn Mine Project. This report has been prepared to satisfy the reporting requirements of the Act as directed by the EPA and also for Condition 11, Schedule 6 of the Project Approval.

This report summarises environmental monitoring results for the Woodlawn Mine for the period 1 – 31 March 2019. Historical depositional dust results recorded by Veolia since January 2015 are included in Appendix A to this report to provide a background air quality baseline.

A summary of the EPL information is provided in the following tables. Table 1 shows the licence information and Table 2 summarises the frequency and units for monitoring data for the reporting period. The EPL was subject to variation on 18 Jan 2019. Links to the previous version and the 18 January 2019 version are in [Table 1](#)

Table 1. Licence information

Environment Protection Licence number	20821
Licensee	Tarago Operations Pty Ltd
Licensee address	Level 7, Suite 702 191 Clarence Street SYDNEY NSW 2000
Premises	Woodlawn Mine Project 507 Collector Road TARAGO NSW 2580
Link to full licence on the EPA website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=115339&SYSUID=1&LICID=20821 https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=155570&SYSUID=1&LICID=20821
Link to Notice of Variation of EPA licence	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=20821 https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=1572566
Complaints Telephone Number	Sydney Office (02) 9119 8111 Woodlawn Office (02) 9119 8140

Table 2. Supporting information of EPL monitoring requirements

Parameter	Monitoring site	Monitoring frequency	Unit of measure
Air quality monitoring: Deposited Dust (insoluble solids)	DG 22*, DG28*, DG33* DG34	Monthly	g/m ² /month
TSP	HVAS-1	24 hours every six days	µg/m ³
PM10	HVAS-2	24 hours every six days	µg/m ³

*Monitoring undertaken by Veolia

1.2 Explanation of units of measurement

- **mg/m³** = milligrams per cubic metre
- **g/m²/month** = grams per square metre per month
- **µg/m³** = micrograms per cubic metre
- **Day** = 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and public holidays
- **Evening** = 6pm to 10pm on any day
- **Night** = 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and public holidays

1.3 Abbreviations

- TOP – Tarago Operations

2. Meteorological Monitoring

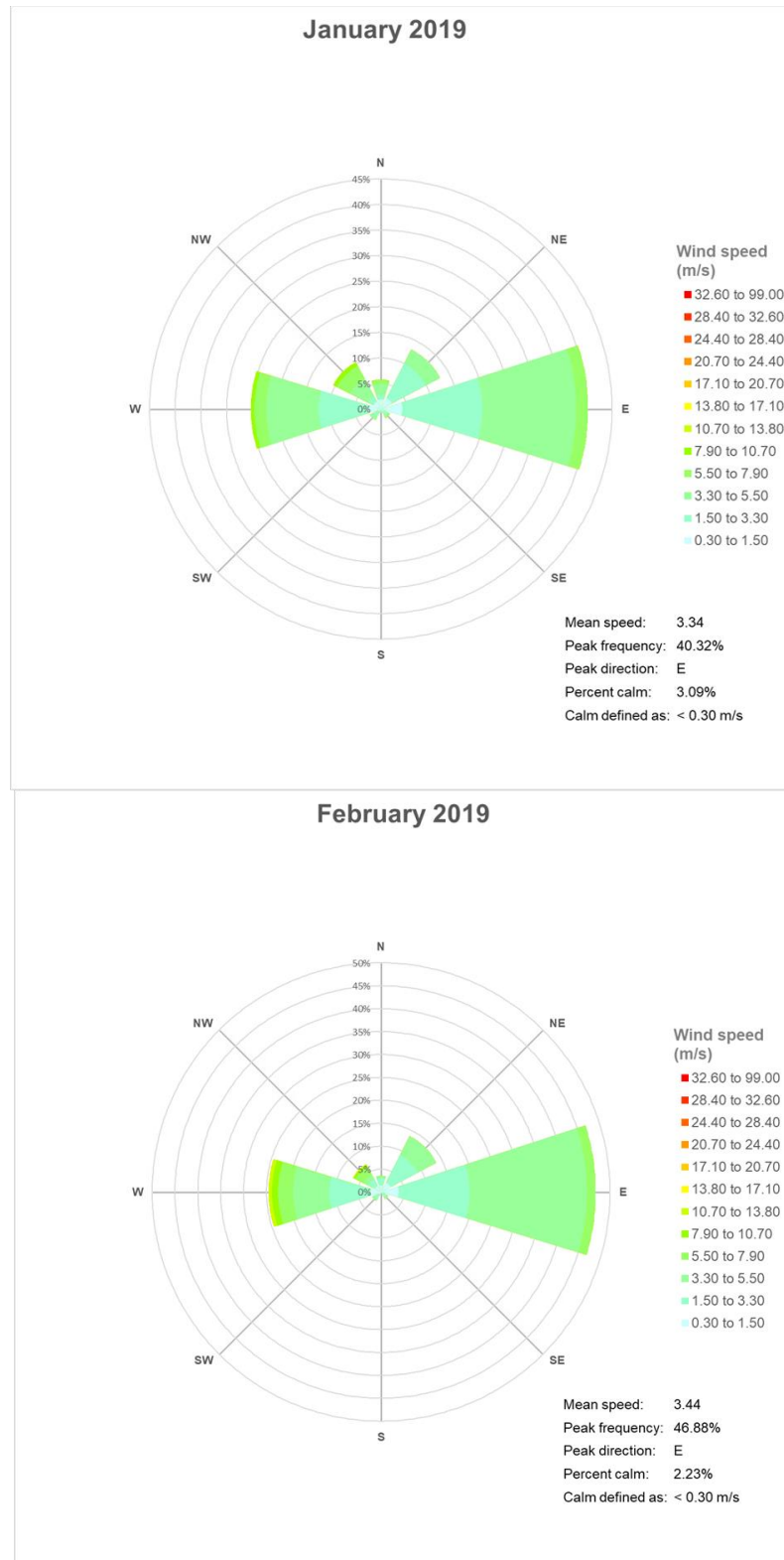
Heron is required to undertake meteorological monitoring on site. Veolia operate an approved weather station (EPA licence 11436, Point 9). As weather may influence monitoring results for dust and noise a summary showing the rainfall, temperature, evaporation and average wind speed for the three months January to March 2019 is summarised in Table 3. The detailed March daily weather data is shown in Appendix B.

Seasonal conditions continue to be dry, although March exceeded the average rainfall. Soil moisture deficiencies continue. The spring vegetation growth flush did not occur due to continued low rainfall and higher than normal temperatures so ground cover remains sparse. The ongoing dry weather has continued and the plant growth index is extremely low. Likewise, the soil water index is extremely low. The NSW DPI have reported that the southeast region remains in 'drought'. The combined drought indicator conditions for Werriwa Parish at 31 March 2019 indicated the site remained in drought (Source: <https://www.dpi.nsw.gov.au/climate-and-emergencies/droughthub/information-and-resources/seasonal-conditions/ssu/nsw-state-seasonal-update-march-2019>)

Table 3. Summary of weather conditions for previous 3 months (January – March 2019)

	January	February	March
Total rainfall (mm)	70.5	42.5	82
Total number of wet days	11	9	11
Average maximum temperature at 2m (°C)	30.5	25.2	22.4
Average minimum temperature at 2m (°C)	16.6	13	12.3
Average wind speed at 10m (m/s)	3.34	3.44	3.36
Evapotranspiration (mm)	170.5	133.1	104.4

The prevailing wind direction trends for the 3 months January - March 2019 is displayed in Figure 1 using wind roses. The wind roses depict the wind speed and direction recorded at 10 m above ground level. During the period the winds prevailed predominantly from the east during January and February and the trend towards westerly winds commenced in March. Rainfall during the period and was close to average. However, evapotranspiration exceeded rainfall therefore minimising any improvement to the severe soil moisture deficit following several months of extremely dry conditions.



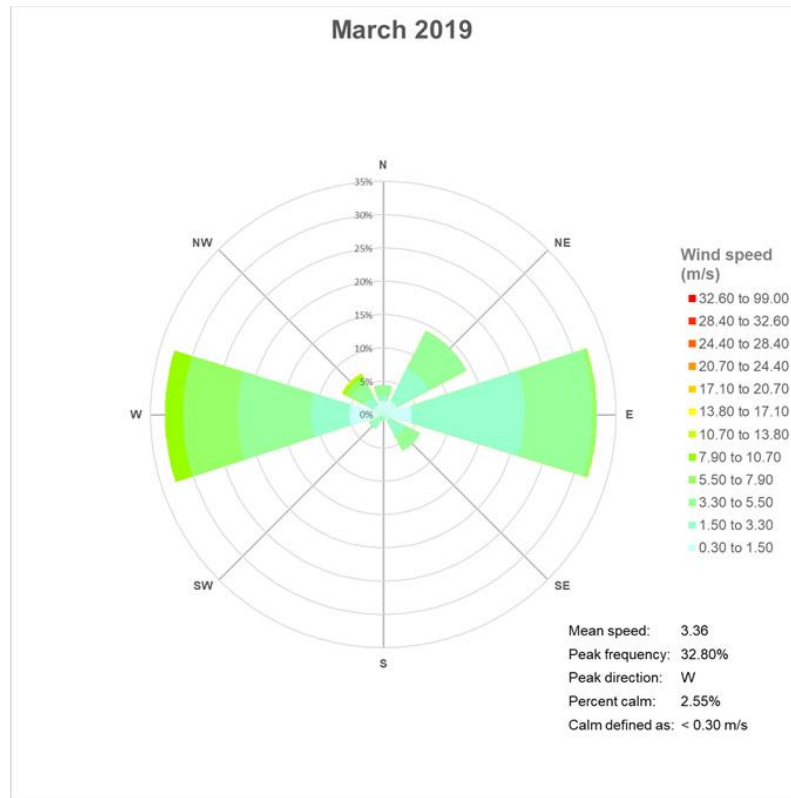


Figure 1. Prevailing wind direction (percentage for month) January – March 2019

3. Air Quality Monitoring

The Air quality monitoring results for Woodlawn Mine are summarised in the following sections.

3.1 Depositional Dust

Depositional dust monitoring around the Woodlawn site is undertaken on a monthly basis. Four depositional dust gauges DG22, DG28, DG33 and DG34 are present to monitor the levels of depositional dust. They are located on Site as follows:

- DG22 – East side of void
- DG28 – Pylara
- DG33 – MBT plant
- DG34 – Behind core shed

DG24, has been used to record dust to the west of the void. Due to construction of the box cut and mine office infrastructure for the new mine the gauge was decommissioned on 31 Jan 2018. The Veolia EPL has been varied accordingly. A new dust gauge, DG34, was installed on 1 Feb 2018. The gauge is still positioned west of the void, but in a new location.

Historical monthly raw results for the period January 2015 – Mar 2017 are shown in Appendix A – Historical deposition dust record. The results were recorded by Veolia prior to the issue of Heron’s EPL and are presented to provide an indication of the background air prior to commencement of the TOP construction.

The EPA licence for the Woodlawn Mine project was issued on May 2017. The raw results for depositional dust commencing May 2017 are recorded in Table 4.

Table 4. Depositional dust (g/m²/month - insoluble solids) recorded since May 2017

Date sampled	DG22	DG24	DG28	DG33	DG34
May 2017	3.3	0.6	0.8	<0.2	
Jun 2017	1.4	0.4	<0.2	<0.2	
Jul 2017	1.7	0.5	2.4	<0.2	
Aug 2017	3.7	0.5	4.0	0.2	
Sep 2017	4.8	0.8	2.1	0.4	
Oct 2017	3.9	3.0	1.0	0.5	
Nov 2017	5.2	1.9	0.8	0.4	
Dec 2017	2.4	1.9	0.4	0.9	
Jan 2018	5.3	4.7	1.8	1	
Feb 2018	2.4	Decommissioned	1.1	1.4	2.8
Mar 2018	3.7		0.4	1.4	0.7
Apr 2018	8.6		2.7	2.4	1.3
May 2018	1.8		1.6	0.3	1
Jun 2018	1.6		3.2	<0.2	0.2
Jul 2018	0.7		1.1	0.3	<0.2
Aug 2018	4.1		6.6	0.9	1.0
Sep 2018	2.3		1.3	0.2	0.6

Oct 2018	5.5		2.7	1.3	2.2
Nov 2018	7.3		3.8	2	12.6
Dec 2018	4.2		8	2.3	8.4
Jan 2019	6.4		8.8	4.2	9.7
Feb 2019	8		8.4	3.4	11.2
Mar 2019	7.1		8.4	2.3	2

A graphical representation of raw depositional dust gauge monitoring results from January 2015 until end of February 2019 is shown in Figure 2.

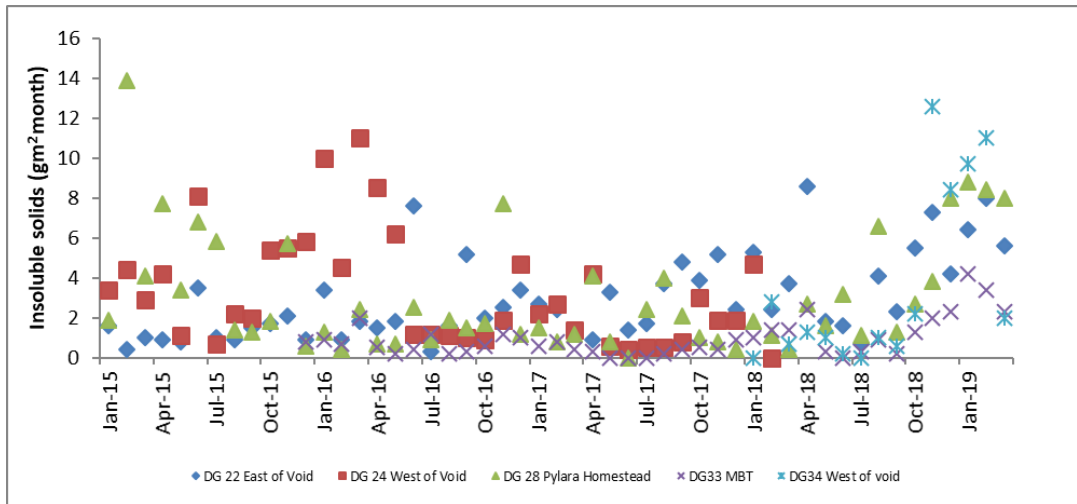


Figure 2. Monthly dust deposition gauge results

Figure 3 shows the annual rolling average for deposited dust (insoluble solids grams per m² per month) for the four monitoring sites between Jul 2016 and end February 2019.

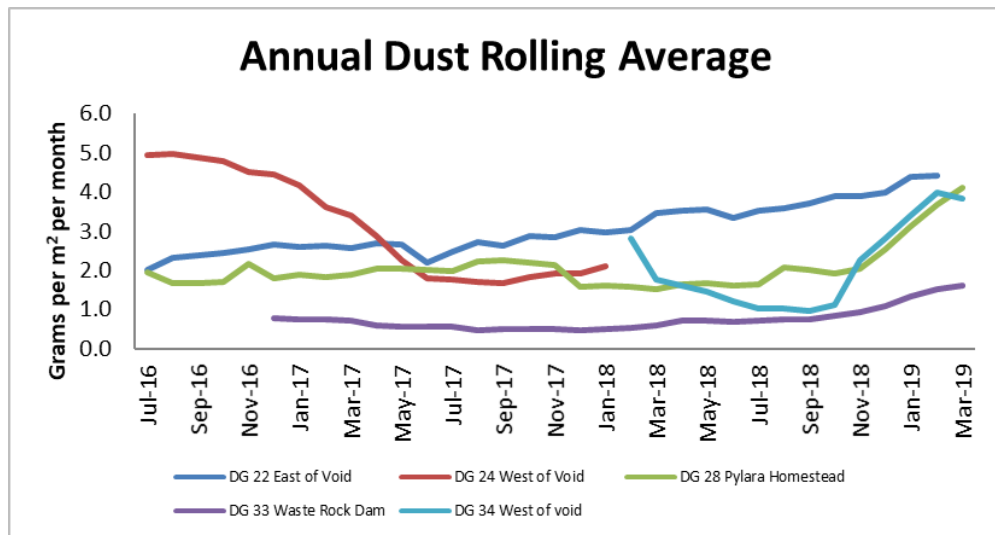


Figure 3. Annual rolling average for insoluble solids (g/m²/month)

The limits for deposited dust are outlined in the Project Approval. The limits are detailed in Table 5.

Table 5. Deposited dust limits

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

- ^a Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources).
- ^b Incremental impact (i.e. incremental increase in concentrations due to the project on its own)
- ^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.

Data recorded prior to 14 Sep 2017 is detailed in Appendix A and summarised in Table 6 to show the average background deposited dust levels recorded prior to commencement of construction. The data shows that the annual rolling average for all four depositional dust gauges did not exceed 4 g/m²/month during the period Jan 2015 to Sep 2017 nor increase the background by more than 2 g/m²/month.

Table 6. Background deposited dust values for Woodlawn (Jan 2015 – Sep 2017)

	DG22	DG24	DG28	DG33
Individual gauge background average	2.1	3.5	3.0	0.7
Overall background average	2.5			

Average raw deposited dust levels from each gauge for the period since construction commenced (Sep 2017 to February 2019) is shown in Table 7. DG24 was decommissioned on 31 Jan 2018 and DG34 was commissioned on 1 Feb 2018.

Table 7. Average deposited dust values since commencement of construction (Sep 2017 – Feb 2019)

	DG22	DG24	DG28	DG33	DG34
Individual gauge average	4.4	Decommissioned	3.4	1.4	3.8
Overall average	2.79				

3.2 Atmospheric dust – particulate matter

The Project Approval requires monitoring of total suspended particulate (TSP) matter and particulate matter < 10µm (PM₁₀) to ensure particulate matter emissions generated by the project do not exceed the criteria listed at any residence on privately owned land. High volume air sampling (HVAS) equipment for atmospheric monitoring was installed on 16 October 2017 at Pylara, the nearest residence located to the east of Woodlawn Mine. Monitoring commenced on 17 October 2017 and is undertaken for a 24 hour cycle every 6 days.

Raw results obtained from the HVAS for PM₁₀ and TSP are shown in Table 8 and Figure 4. The rolling 12 month average is shown in **Figure 5**.

Table 8. Raw results for PM₁₀ and TSP

Date start of 24 hour sampling run (7:00am – 7:00am)	PM ₁₀ µg/m ³	TSP µg/m ³
17 Oct 2017	6.7	14.2
23 Oct 2017	6.7	20.6
29 Oct 2017	8.6	16.8
4 Nov 2017	12.0	22.3
10 Nov 2017	9.5	14.4
16 Nov 2017	13.9	20.6
22 Nov 2017	11.8	20.9
28 Nov 2017	9.1	15.0
4 Dec 2017	8.4	14.5
10 Dec 2017	18.3	27.1
16 Dec 2017	23.7	35.5
22 Dec 2017	18.6	30.4
28 Dec 2017	22.3	35.5
3 Jan 2018	11.9	17.3
9 Jan 2018	9.5	20.1
15 Jan 2018	8.7	14.2
21 Jan 2018	40.6	69.2
27 Jan 2018	11.4	19.7
2 Feb 18	7.4	13.2
8 Feb 18	19.1	44
14 Feb 18	48.3	102
20 Feb 18	7.3	15.5
26 Feb 18	7.1	10.7
4 Mar 18	8.9	15.9
10 Mar 18	9.2	17.7
16 Mar 18	14.9	31.9
22 Mar 18	6.7	14.4
28 Mar 18	14.9	25.5
3 Apr 18	15	30.1
9 Apr 18	18.5	38.4
15 Apr 18	12.0	42.2
21 Apr 18	18.0	34.1
27 Apr 18	11.6	29.5
3 May 18	19.8	47.5
9 May 18	22.4	40.7
15 May 18	10.1	21.3
21 May 18	8.0	27
27 May 18	24.1	31.9
2 Jun 18	2.7	9.0
8 Jun 18	5.7	12.8
14 Jun 18	4.9	15.8
20 Jun 18	6.6	11.9
26 Jun 18	2.7	4.6
2 Jul 18	6.2	16.8
8 Jul 18	<1.0	3.7
14 Jul 18	5	8.4
20 Jul 18	4.5	14.8
26 Jul 18	6.2	16.8
1 Aug 18	7.1	13.8

7 Aug 18	4.9	9.8
13 Aug 18	3.1	8.7
19 Aug 18	2.6	7.0
25 Aug 18	5.5	10.3
31 Aug 18	7.9	12.9
6 Sep 18	3.6	7.7
12 Sep 18	17.9	39.7
18 Sep 18	22.1	49.5
24 Sep 18	5.8	16.8
30 Sep 18	11.8	27.5
6 Oct 18	6.3	14.8
12 Oct 18	3.6	6.3
18 Oct 18	6.9	16.0
24 Oct 18	15.4	34.3
30 Oct 18	15.4	34.3
5-Nov-18	15.5	38.4
11-Nov-18	7.2	17.7
17-Nov-18	6.1	19.4
23-Nov-18	5.1	14.4
29-Nov-18	6.6	9.9
5-Dec-18	8.5	18
11-Dec-18	16.4	39
17-Dec-18	19.7	47.7
23-Dec-18	3.8	13.4
29-Dec-18	33.5	51.7
4-Jan-19	29.9	37
10-Jan-19	4.4	8.5
16-Jan-19	40	65.7
22-Jan-19	39.5	69.8
28-Jan-19	9.1	17.6
3-Feb-19	23.1	30.3
9-Feb-19	10.5	23.7
15-Feb-19	15.6	37.5
21-Feb-19	12.1	24.9
27-Feb-19	25.4	53.9
5 Mar 19	25.4	53.9
11 Mar 19	26.5	61.8
17 Mar 19	6	19.8
23 Mar 19	22.3	60.6
29 Mar 19	9.8	17.8

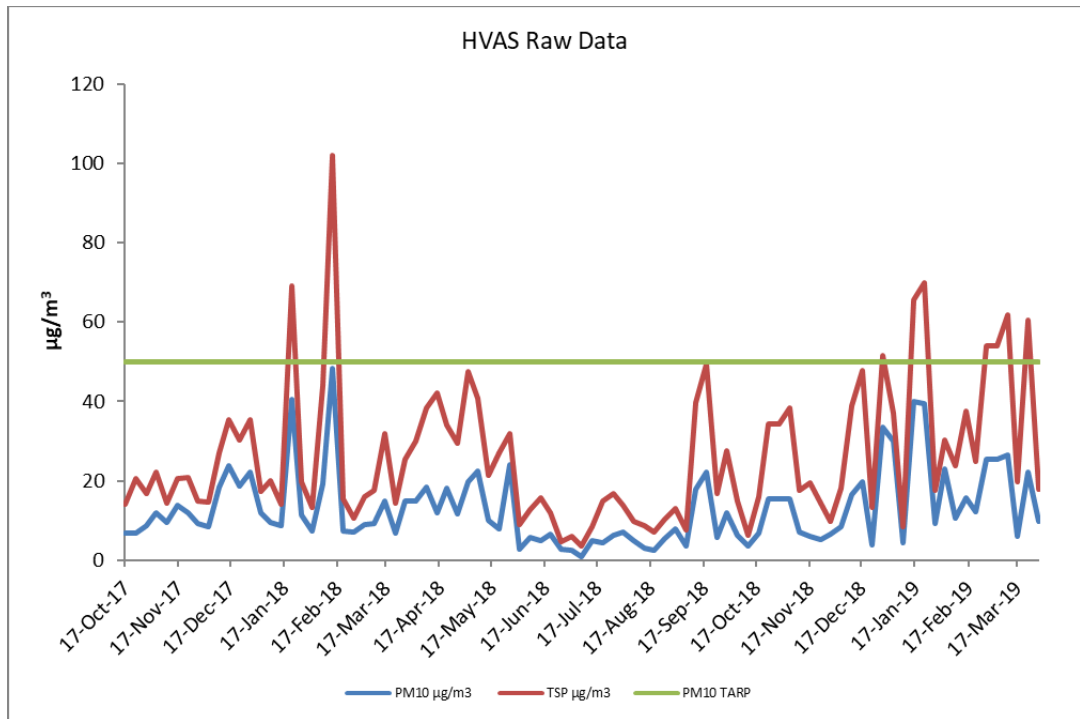


Figure 4. PM₁₀ and TSP raw data results

Annual rolling average results for both PM₁₀ and TSP are shown in Figure 5.

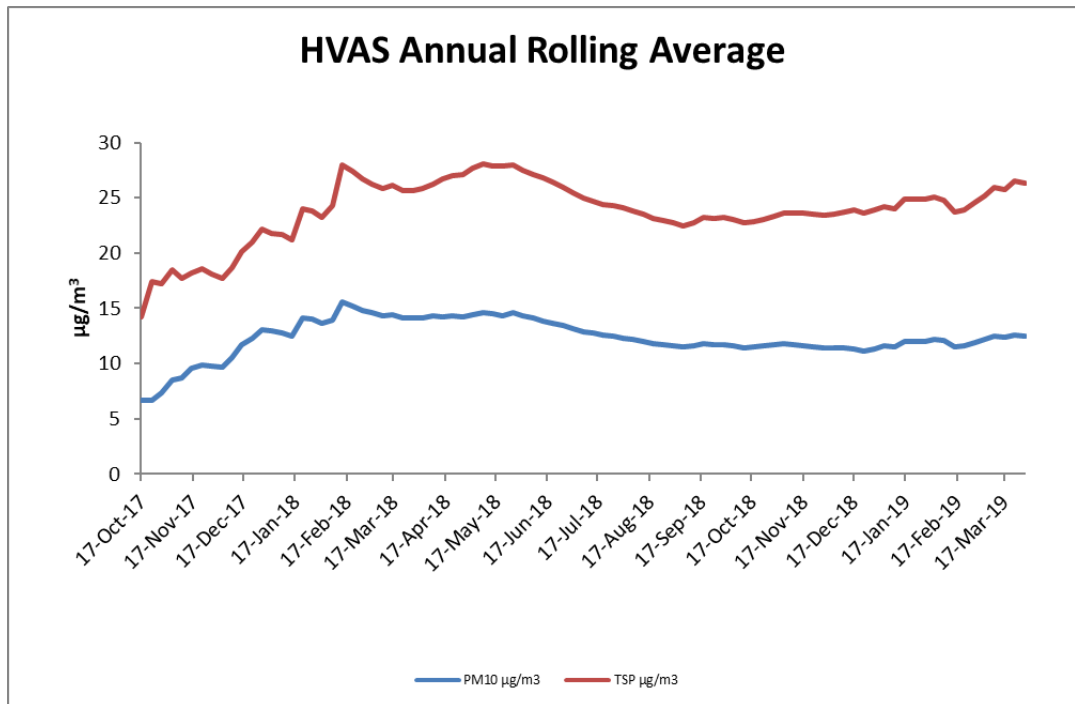


Figure 5. PM₁₀ and TSP annual rolling average results

The limits for TSP and PM₁₀ are outlined in the Project Approval. The limits are detailed in Table 9.

Table 9. TSP and PM₁₀ limits

Pollutant	Averaging Period	^dCriterion
Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³
Particulate matter < 10 µm	24 hour	^a 50 µg/m ³

- ^a Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources).
- ^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fog, fire incidents or any other activity agreed by the Director-General.

Compliance summary:

The PM₁₀ and TSP results for 24 hour period are within the criteria set out in the PA.

The annual average emissions are within the criteria set out in the PA with the PM₁₀ annual average concentration up to 29 March 2019 of 12.5 µg/m³ and TSP of 24.8 µg/m³.

4. Noise Monitoring

The noise criteria to be met at any residence on privately owned land is contained in the project approval and described in Table 10.

The EPL requires that the premises must not emit noise exceeding an L_{Aeq} , 15 minute noise level of 35 dB(A) at any sensitive receivers during the operational phase. There are no specified limits covering the construction phase however the Interim Construction Noise Guideline allows for construction activities being undertaken during daytime to be 10 dB(A) above background.

The meteorological conditions to be met during noise monitoring include:

- a) Wind speeds up to 3 m/s at 10 m above ground level; or
- b) Temperature inversion conditions of up to 3°C/100m and wind speeds up to 2 m/s at 10m above ground level

Table 10. Noise criteria (dB(A))

Receivers	Day/Evening/Night ($L_{Aeq}(15\text{minute})$)	Night ($L_{A1(\text{max})}$)
All residential receivers	35	45

Attended noise surveys were unable to be carried out due to wind exceeding the speed criteria for noise monitoring.

Table 11. Monitoring locations for noise monitoring

Monitoring location	Description
NM1	Pylara - Residence owned by Veolia
NM2	Cowley Hills – Residence owned by Veolia
NM3	Woodlawn – Residence owned by Veolia

Attended noise measurements were undertaken using a calibrated Type 1, Castle Group Ltd dBAir environmental monitor. Noise monitoring was carried out on 14 March 2019 using two measurement profiles as follows:

- Measurement 1 – Frequency weighting A, time weighting F
- Measurement 2 – Frequency weighting C, time weighting F.

Real time meteorological conditions were obtained at each location using a BL-300 Anemo-thermometer and hygrometer and validated using the authorised Woodlawn on-site weather station. Readings are routinely taken at the Pylara, Woodlawn and the Cowley Hills residences. All locations represent the nearest receptors and are owned by Veolia. The results show that the construction activities have little noise impact on any of the receptor locations.

Compliance statement: The construction program complies with the nominated construction noise guidelines.

5. Blasting

Airblast overpressure and the ground vibration level are required to be monitored for all blasts undertaken during operations. EPL and Project Approval limits at any residence on privately owned land are detailed in Table 12.

Table 12. EPL & Project Approval limits for airblast and ground vibration

Time of blasting	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Any time	120	10	0%
Day	115	5	5% of the total number of blasts over a period of 12 months
Evening	-	2	5% of the total number of blasts over a period of 12 months
Night, and all day on Sundays and public holidays	-	1	0%

The first blasting operation was carried out on 20 April 2018. This was a test blast. The second operation was carried out on 24 April 2018. Four blast monitors were set up to monitor the blast events. The monitors were located at the following sites:

- Mine High wall
- Mechanical Biological Treatment facility (MBT)
- Pylara homestead
- SW SML boundary

Blast results for each monitoring location are detailed in Table 13.

Table 13. Blast Monitoring Results

Date	Time	Monitor Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)
20/4/18	16.52 hrs	Mine High wall	101	1.25
20/4/18	16.52 hrs	MBT	Nil	Nil trigger
20/4/18	16.52 hrs	Pylara Homestead	Nil	Nil trigger
20/4/18	16.52 hrs	SW Boundary	Nil	Nil trigger
24/4/18	16.52 hrs	Mine High Wall	115.1	2.3
24/4/18	16.52	MBT	106.0	0.58
24/4/18	16.52 hrs	Pylara Homestead	Nil	Nil trigger
24/4/18	16.52 hrs	SW Boundary	Nil	Nil trigger

On 25 September 2018 blasting operations commenced at the box cut. Three Instantel Micromate vibration, noise and air overpressure monitors were installed as follows:

Pylara homestead (being the designated closest residence)
 Void wall
 Mechanical Biological Treatment facility (MBT)

Date	Time	MBT	Void Wall			Pylara
			Trigger	Mic Peak (dBL)	Peak Vector Sum 1 (mm/s)	
1 Oct 18	0535	Nil trigger	Vibration	120.7	1.002	Nil trigger
1 Oct 18	1830	Nil trigger	Vibration	128.0	0.530	Nil trigger
3 Oct 18	1830	Nil trigger	Vibration	<88	0.866	Nil trigger
5 Oct 18	1830	Nil trigger	Nil trigger			Nil trigger
6 Oct 18	2010	Nil trigger	Nil trigger			Nil trigger
7 Oct 18	0500	Nil trigger	Nil trigger			Nil trigger

On 9 Oct the data logger located at MBT was relocated to Woodlawn Farm. Data recording continued until 8 Nov 18 until the three rental monitors were decommissioned.

Monitoring results for the period 1 Mar – 31 Mar 2019 are recorded at **Error! Reference source not found.**

Blast monitoring was conducted continuously at the south west border of the SML from 14 Nov 2018 until 25 Mar 2019. The records for the period 1-25 Mar are shown in Table 14. Earlier results are provided in previous months reports. There were no triggers associated concurrent with blasting events during the period 1-25 Mar 2019.

Table 14. Blast monitoring south west boundary SML 1-25 Mar 2019

Date	Time	PA Exceedance	Mic Peak (dBL)	Peak Vector Sum 1 (mm/s)
1 Mar 19	18.45	Nil		
2 Mar 19	1845	Nil		
2 Mar 19	0700	Nil		
3 Mar 19	1830	Nil		
3 Mar 19	0700	Nil		
4 Mar 19	0800	Nil		
4 Mar 19	1900	Nil		
5 Mar 19	1845	Nil		
6 Mar 19	0530	Nil		
7 Mar 19	0650	Nil		
7 Mar 19	0010	Nil		
7 Mar 19	1230	Nil		
8 Mar 19	0650	Nil		
8 Mar 19	1230	Nil		
9 Mar 19	0150	Nil		
9 Mar 19	1850	Nil		

10 Mar 19	0650	Nil		
10 Mar 19	2050	Nil		
11 Mar 19	0700	Nil		
11 Mar 19	0220	Nil		
12 Mar 19	0700	Nil		
12 Mar 19	1815	Nil		
13 Mar 19	0645	Nil		
13 Mar 19	1900	Nil		
14 Mar 19	0700	Nil		
14 Mar 19	2130	Nil		
15 Mar 19	0250	Nil		
16 Mar 19	0125	Nil		
16 Mar 19	0650	Nil		
16 Mar 19	2150	Nil		
17 Mar 19	0450	Nil		
18 Mar 19	0615	Nil		
18 Mar 19	1400	Nil		
19 Mar 19	0630	Nil		
20 Mar 19	0240	Nil		
20 Mar 19	1600	Nil		
21 Mar 19	0300	Nil		
21 Mar 19	1900	Nil		
22 Mar 19	0345	Nil		
22 Mar 19	1145	Nil		
22 Mar 19	2015	Nil		
23 Mar 19	0610	Nil		
23 Mar 19	1900	Nil		
24 Mar 19	1400	Nil		
24 Mar 19	1900	Nil		
25 Mar 19	0030	Nil		
25 Mar 19	0610	Nil		

The monitor was relocated for internal monitoring behind ED3SS on 25 Mar 2019 at 1300. Triggers were below the thresholds outlined in the Project Approval (Table 12).

25 Mar 19	1400	Nil		
25 Mar 19	2200	Nil		
26 Mar 19	1800	Nil		
27 Mar 19	0600	Nil		
27 Mar 19	1350	Nil		
28 Mar 19	Nil			
29 Mar 19	0350			
29 Mar 19	1330			
30 Mar 19	0205			

30 Mar 19	0930			
30 Mar 19	2135	Nil		
31 Mar 19	0700	Nil		
31 Mar 19	0330	Nil		

Compliance statement: Airblast overpressure and ground vibration monitoring results during blasting operations have remained below the project limits.

6. Complaints

No complaints occurred during the reporting period.

Table 15. Complaints register

Date and time	Complainant	Nature of complaint	Recorded by	Corrective action	Date closed

Appendix A – Historical deposition dust record

Date sampled	DG22	DG24	DG28	DG33
Jan 2015	1.6	3.4	1.9	
Feb 2015	0.4	4.4	13.9	
Mar 2015	1.0	2.9	4.1	
Apr 2015	0.9	4.2	7.7	
May 2015	0.8	1.1	3.4	
Jun 2015	3.5	8.1	6.8	
Jul 2015	1.0	0.7	5.8	
Aug 2015	0.9	2.2	1.4	
Sep- 2015	1.5	2.0	1.3	
Oct 2015	1.7	5.4	1.8	
Nov 2015	2.1	5.5	5.7	
Dec 2015	0.9	5.8	0.6	0.8
Jan 2016	3.4	10	1.3	0.9
Feb 2016	0.9	4.5	0.4	0.7
Mar 2016	1.8	11	2.4	2.0
Apr 2016	1.5	8.5	0.7	0.5
May 2016	1.8	6.2	0.7	0.2
Jun 2016	7.6	1.2	2.5	0.4
Jul 2016	1.2	0.3	23	1.2
Aug 2016	1.1	0.6	1.9	0.2
Sep 2016	1.0	1.2	6.0	0.3
Oct 2016	0.9	2.0	3.2	0.6
Nov 2016	1.9	2.2	2.6	1.2
Dec 2016	4.7	1.1	1.7	1.0
Jan 2017	2.2	2.3	4.7	0.6
Feb 2017	2.7	2.0	1.1	0.8
Mar 2017	1.4	0.9	3.9	0.4
Apr 2017	4.2	0.9	0.09	0.3

Appendix B – Daily weather statistics – March 2019

Date (March 2019)	Temp min (oC)	Temp max (oC)	Rain (mm)	Number of wet days (total)	Weather station - Hours recorded (n)	Avg wind speed (m/s)	Avg wind direction (deg)	Evapo transpira tion (mm)
1	15.0	26.3	0.0		24.0	3.1	65.8	4.8
2	15.3	26.7	0.0		24.0	3.5	52.9	4.9
3	14.6	29.5	0.0		24.0	1.8	153.7	4.8
4	14.8	31.6	0.0		24.0	1.7	176.8	4.9
5	14.9	27.6	0.0		24.0	2.1	206.0	4.9
6	9.8	21.1	2.0		24.0	5.0	268.2	4.2
7	5.7	20.4	0.0		24.0	2.9	75.6	3.2
8	11.0	25.7	0.0		24.0	2.6	178.8	4.2
9	15.7	26.2	1.0		24.0	2.9	139.0	4.1
10	13.9	26.2	0.0		24.0	3.2	199.7	3.7
11	12.2	26.5	0.0		24.0	2.6	263.4	4.8
12	13.8	23.4	0.0		24.0	4.4	249.9	4.9
13	11.3	17.4	1.5		24.0	3.8	72.5	5.2
14	14.3	22.4	3.5		24.0	3.0	61.0	2.9
15	12.5	19.9	0.0		24.0	3.4	104.9	2.3
16	12.9	20.2	0.5		24.0	4.6	97.4	3.0
17	13.8	18.7	1.5		24.0	3.0	138.8	3.0
18	11.4	20.5	24.0		24.0	3.7	170.7	1.4
19	15.7	21.1	0.0		24.0	2.6	119.2	2.1
20	15.2	24.0	0.0		24.0	1.8	95.3	2.3
21	16.1	24.2	0.0		24.0	2.7	94.0	3.2
22	14.5	22.3	7.0		24.0	2.3	81.3	2.8
23	14.0	24.3	0.0		24.0	1.8	192.1	2.3
24	16.9	23.9	0.0		24.0	3.6	274.6	2.6
25	12.1	17.4	1.0		24.0	8.2	282.8	3.0
26	6.6	17.2	0.0		24.0	4.7	248.0	1.4
27	5.0	19.0	0.0		24.0	2.5	69.7	3.9
28	10.1	23.2	0.0		24.0	1.9	189.1	3.0
29	13.7	21.5	27.0		24.0	3.1	277.3	3.0
30	5.5	13.9	13.0		24.0	5.3	266.3	2.3
31	4.1	11.5	0.0		24.0	6.0	269.3	1.5
Average/ Total	12.3	22.4	82	11		3.36		104.4