

**TOMINGLEY GOLD PROJECT**

# **Monthly Environmental Monitoring Report**

**April 2017**

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## Monthly Environmental Monitoring Report

April 2017

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### Document History

DATE	VERSION	REASON FOR CHANGE	AUTHOR
	Rev 1	Submitted for Information	CH

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# 1. Introduction and Scope

This Monthly Environmental Monitoring Report has been prepared to collate environmental monitoring data undertaken for the Tomingley Gold Project during the month of April 2017.

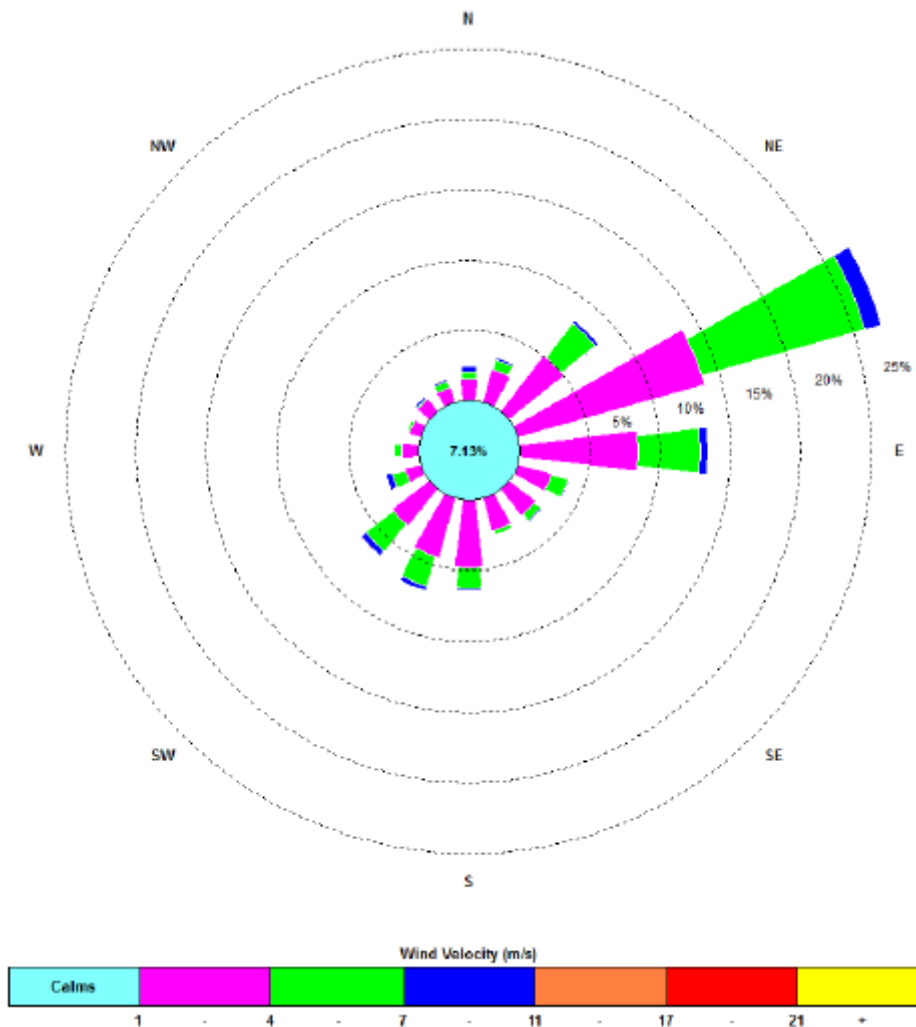
This report also compares data collected to targets and provides commentary on environmental issues during the month.

# 2. Weather for April 2017

## A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. April 2017 wind rose



**Figure 2. Rainfall April 2017**

<b>March 2017</b>	<b>Rainfall (mm)</b>
<b>April 6</b>	2.8
<b>April 9</b>	1.2
<b>April 25</b>	11
<b>April 26</b>	2.2
<b>April 27</b>	0.2
<b>Total Rainfall</b>	17.4

### 3. Monitoring Locations

FIGURE 3 indicates the location of where monitoring is undertaken for the project. Any additional monitoring undertaken will be discussed within the body of this report.

Figure 3. TGO water and vegetation monitoring points

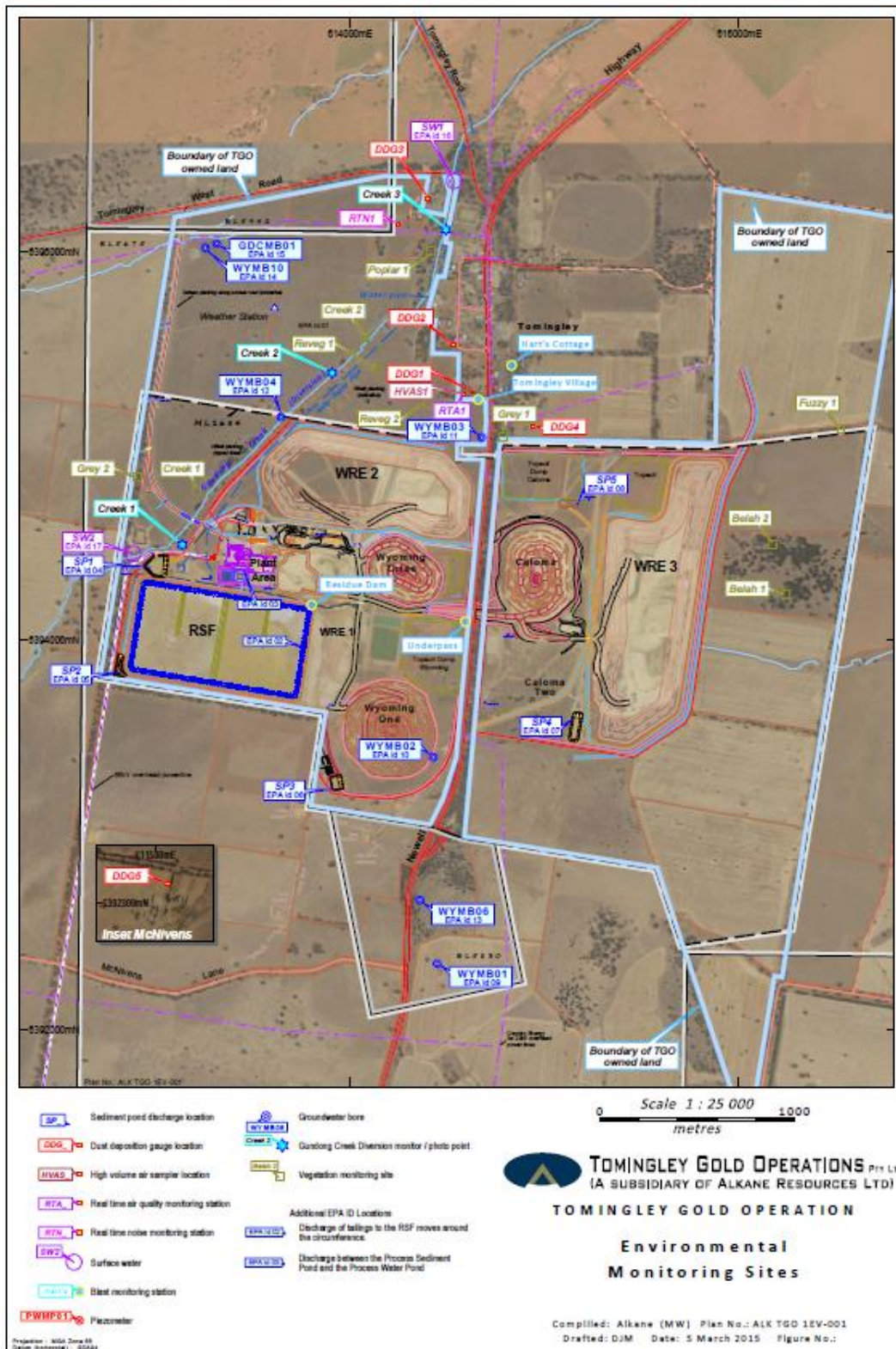
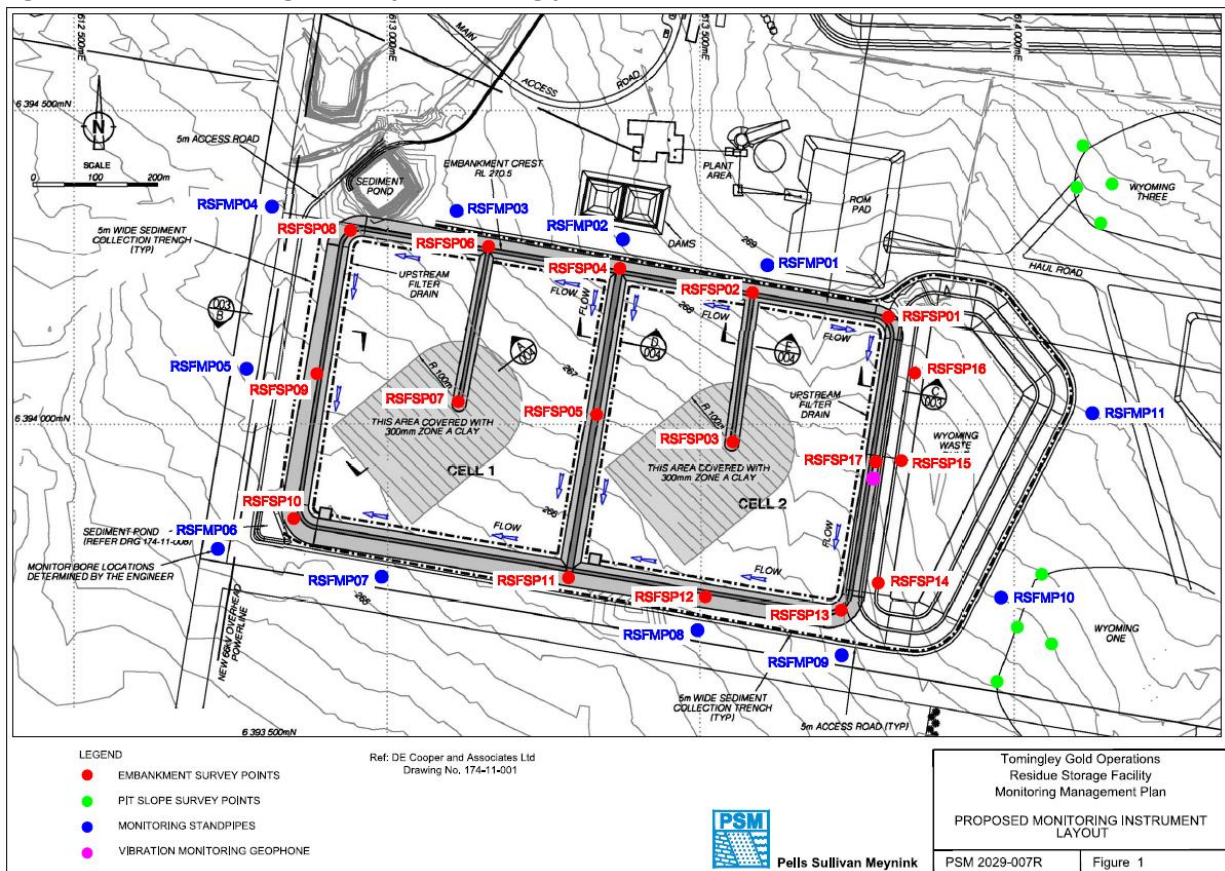




Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

**Figure 4. Residue Storage Facility monitoring points**



## 4. Air Quality Monitoring

### A. PM10 Monitoring

PM10 is measured via a Tapered Element Oscillating Microbalance (TEOM) located at the southern edge of the Tomingley Village. This machine transmits real-time data via the internet to a computer located on site.

The Performance Criteria for PM10 has been set at an Annual Average of 30ug/m<sup>3</sup> and a 24-Hour Average of 50ug/m<sup>3</sup>.

The 24 hour average limit was not exceeded during April.

The annual average at the end of March was 16.9ug/m<sup>3</sup>, well below the license limit.

Figure 5. TEOM Data April 2017

Date	24 Hr Averages	Running Average	Comment
	(µg/m <sup>3</sup> )		
1/04/2017	25.8	17.8	
2/04/2017	19.5	17.8	
3/04/2017	10.6	17.7	1-hour average data used
4/04/2017	11.3	17.7	
5/04/2017	10.7	17.6	
6/04/2017	9.5	17.5	
7/04/2017	8.8	17.4	
8/04/2017	9.2	17.3	
9/04/2017	47.0	17.3	
10/04/2017	48.5	17.4	
11/04/2017	21.2	17.3	
12/04/2017	13.6	17.3	
13/04/2017	16.2	17.2	
14/04/2017	NA	17.1	Insufficient data
15/04/2017	22.3	17.1	
16/04/2017	24.5	17.2	
17/04/2017	28.4	17.2	
18/04/2017	23.4	17.1	
19/04/2017	17.6	17.1	1-hour average data used
20/04/2017	13.1	17.1	
21/04/2017	13.9	17.1	
22/04/2017	21.6	17.1	
23/04/2017	16.7	17.1	
24/04/2017	16.9	17.1	
25/04/2017	14.7	17.1	
26/04/2017	NA	17.0	Insufficient data
27/04/2017	11.3	17.0	
28/04/2017	12.4	17.0	
29/04/2017	15.2	17.0	
30/04/2017	12.7	16.9	
<b>Average</b>	<b>18.4</b>		
	<b>24 Hour Criteria Exceedance</b>		

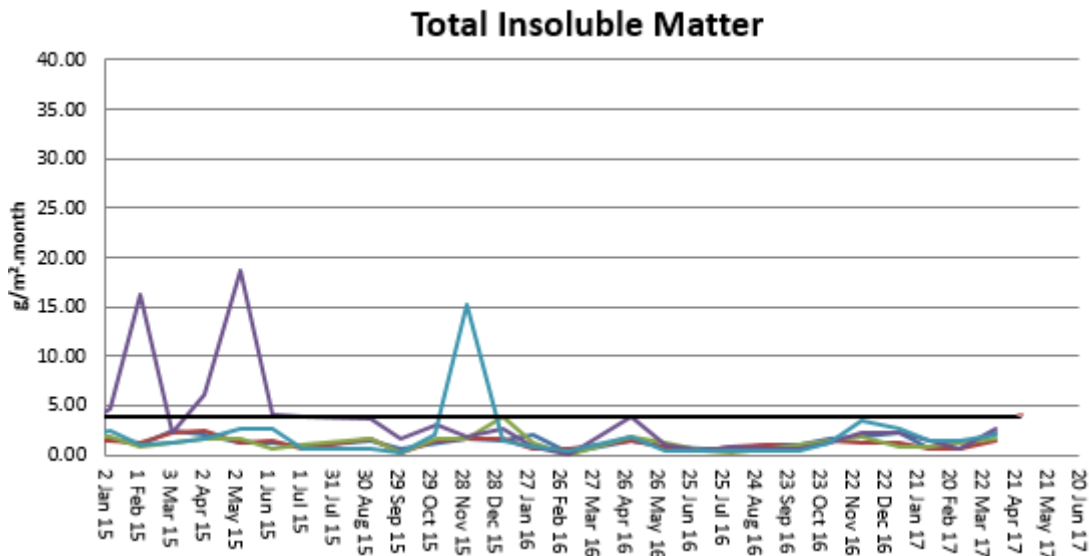
Note: For comparison purposes highlighted results indicate levels above the EPA and NEPM 24-hour maximum criteria for PM<sub>10</sub>



## B. Depositional Dust

Depositional Dust monitoring undertaken during this month returned the results indicated in the table below. The performance criteria for deposited dust is averaged over 12 months.

**Figure 6. Dust Deposition Results 2015 - 2017**

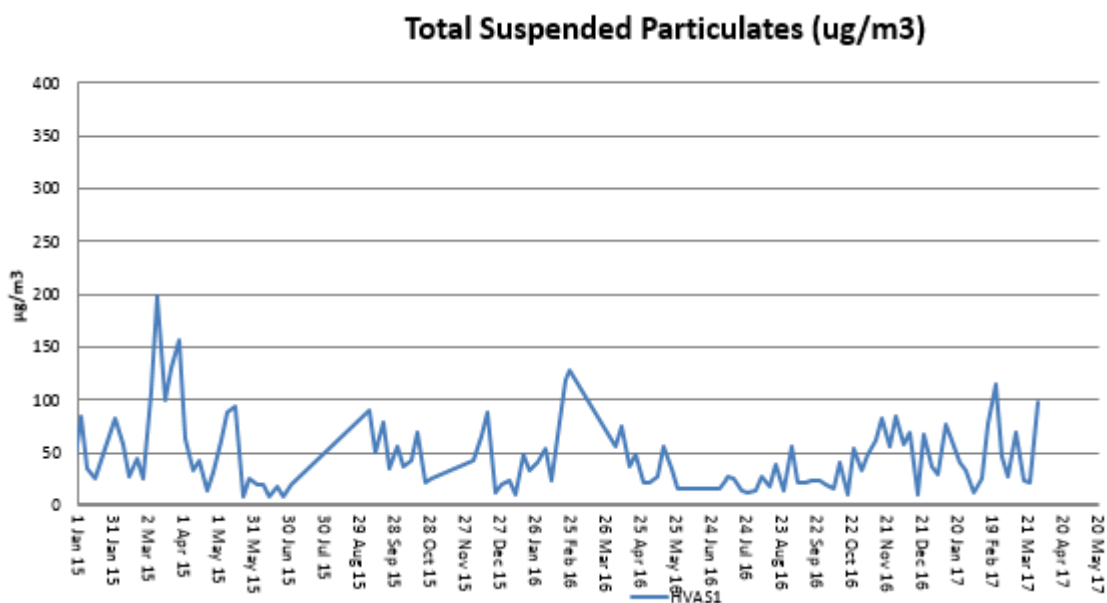


## C. High Volume Air Sampler - Total Suspended Particulates

High Volume Air Sampling (HVAS) for Total Suspended Particulates (TSP) was undertaken this month. Figure 7 below provides the results.

The performance criteria for TSP is averaged over 12 months

**Figure 7. Hi-Volume Air Sampler Data 2015 - 2017**

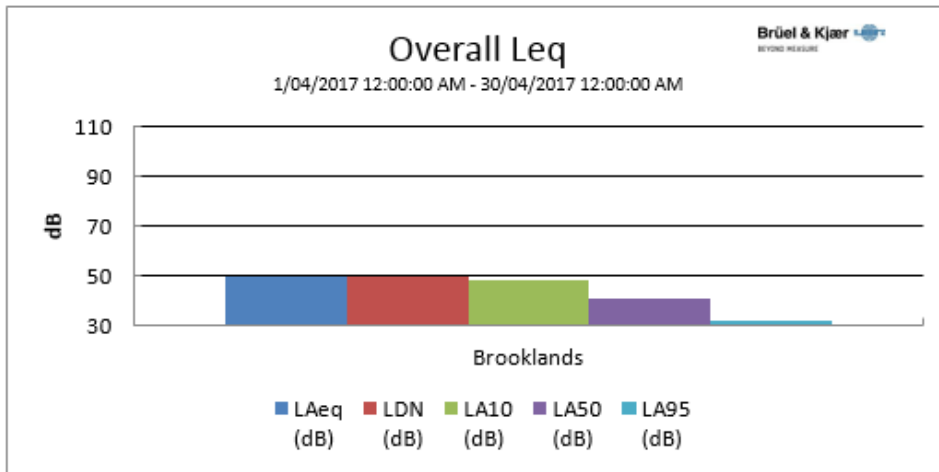


## 5. Noise Monitoring

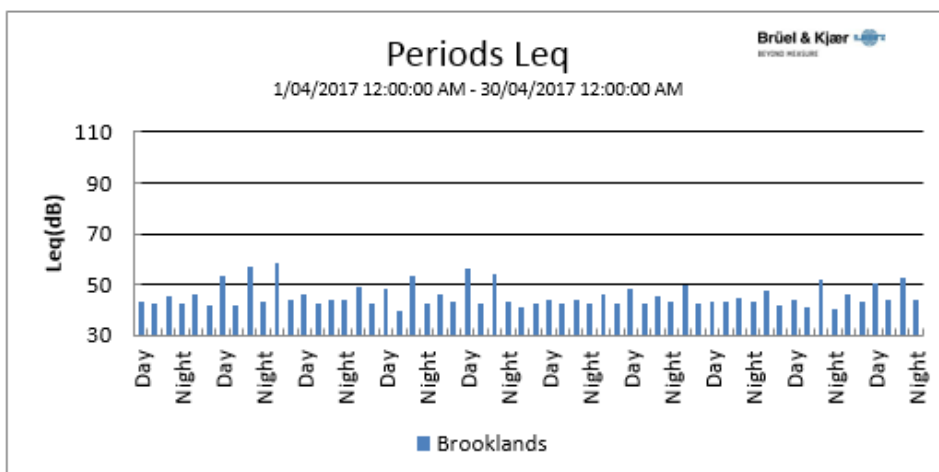
### A. Real-Time Noise Monitoring

See real-time noise monitoring data presented below.

Figure 8. TGO Noise Monitoring 1/4/2017 - 30/4/2017



Location	Start Time	End Time	Activity	LDN (dB)	L <sub>Aeq</sub> (dB)	L <sub>AF</sub> (dB)	L <sub>AMin</sub> (dB)	L <sub>A10</sub> (dB)	L <sub>A50</sub> (dB)	L <sub>A95</sub> (dB)
Brooklands	1/04 12:00:00 AM	30/04 12:00:00 AM	100%	49.5	49.5		20.6	47.8	41.0	31.6



## 6. Surface Water Monitoring

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### A. Gundong Creek

Gundong Creek did not flow during April and as such, no water sampling was undertaken.

### B. Sedimentation Ponds

Sediment basins did not experience any discharges during the month of April.

## 7. Groundwater Monitoring

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Groundwater was undertaken during March in line with license requirements.

Results from this round of monitoring fell within expected limits.

A further round of monitoring is scheduled in for June.

## 8. Blast Monitoring

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Blasts are carried out in all open cut pits and vibration and decibels are monitored from several locations.

Below are the vibration results recorded from the monitors at Hart's Cottage and Tomingley Village.

**Figure 9. Blast Monitoring**

EventKey	Date/Time	Max R (mm/s)	Location
77119	3/04/2017 13:05	0.07	Harts Cottage
77119	3/04/2017 13:05	0.08	Tomingley Village
77141	4/04/2017 12:57	0.11	Harts Cottage
77141	4/04/2017 12:57	0.13	Tomingley Village
77163	5/04/2017 13:06	0.24	Harts Cottage
77163	5/04/2017 13:06	0.67	Tomingley Village
77186	6/04/2017 13:09	0.15	Harts Cottage
77186	6/04/2017 13:09	0.43	Tomingley Village
77220	8/04/2017 14:42	0.1	Harts Cottage
77220	8/04/2017 14:42	0.23	Tomingley Village
77224	8/04/2017 15:25	0.19	Harts Cottage
77224	8/04/2017 15:25	0.19	Tomingley Village
77477	10/04/2017 13:40	0.06	Harts Cottage
77477	10/04/2017 13:40	0.06	Tomingley Village
77420	13/04/2017 14:24	0.22	Harts Cottage
77420	13/04/2017 14:24	0.29	Tomingley Village
77421	13/04/2017 14:37	0.07	Harts Cottage
77421	13/04/2017 14:37	0.11	Tomingley Village
77459	18/04/2017 14:23	0.26	Harts Cottage
77459	18/04/2017 14:23	0.43	Tomingley Village
77460	18/04/2017 14:42	0.08	Harts Cottage
77460	18/04/2017 14:42	0.11	Tomingley Village
77492	20/04/2017 13:59	0.19	Harts Cottage
77492	20/04/2017 13:59	0.3	Tomingley Village
77544	22/04/2017 13:01	0.21	Harts Cottage
77544	22/04/2017 13:01	0.37	Tomingley Village
77552	23/04/2017 18:50	0	Harts Cottage
77552	23/04/2017 18:50	0	Tomingley Village
77574	24/04/2017 15:19	0.05	Harts Cottage
77574	24/04/2017 15:19	0.07	Tomingley Village
77575	24/04/2017 15:28	0.07	Harts Cottage
77575	24/04/2017 15:28	0.11	Tomingley Village
77571	25/04/2017 21:22	0.01	Harts Cottage
77571	25/04/2017 21:22	0.03	Tomingley Village
77586	26/04/2017 13:20	0.23	Harts Cottage
77586	26/04/2017 13:20	0.47	Tomingley Village
77638	29/04/2017 12:59	0.1	Harts Cottage
77638	29/04/2017 12:59	0.11	Tomingley Village

## 9. Residue Storage Facility

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Residue from the processing plant is discharged into the Residue Storage Facility or RSF. The Environmental Protection Licences dictates that the Weak Acid Dissociable (WAD) Cyanide found in this residue must be less than 20 milligrams per litre for 90% of the time and less than 30 milligrams per litre for 100% of the time.

WAD cyanide discharge levels are shown below with the maximum reading well below the 100<sup>th</sup> percentile limit of 30ppm.

- Monthly average: 1.96 ppm
- Daily maximum: 6.82 ppm on 25th April
- Daily minimum: 0.17 ppm on 1<sup>st</sup> April
- Number of exceedances: zero

## 10. Biodiversity Monitoring

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### Fauna deaths:

- There were no fauna deaths in the RSF for the month.

### Vertebrate pests

- A program of trapping feral cats and foxes has continued with no animals being captured throughout April