

TOMINGLEY GOLD PROJECT

**Monthly Environmental
Monitoring Report
November 2016**

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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 November 2016.

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

2. Weather for November 2016

A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. November 2016 wind rose

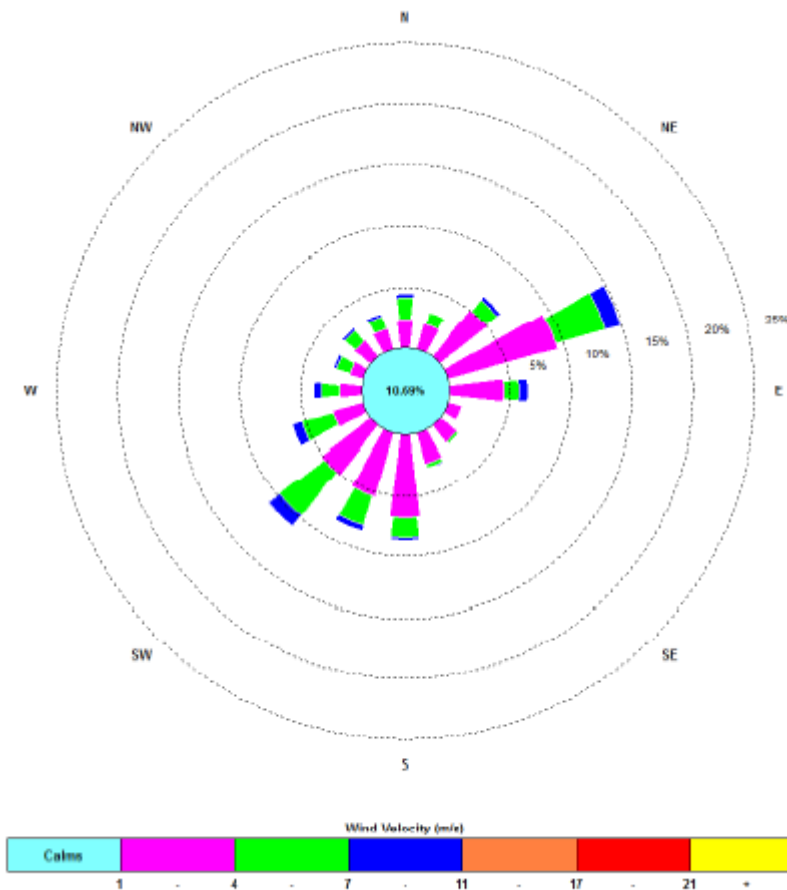


Figure 2.10: Tomingley Gold Operations Wind Rose – November 2016

Figure 2. Rainfall November 2016

November 2016	Rainfall (mm)
November 9	4.2
November 11	18.6
November 12	47
November 14	4.2
November 24	0.2
Total Rainfall	74.2

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

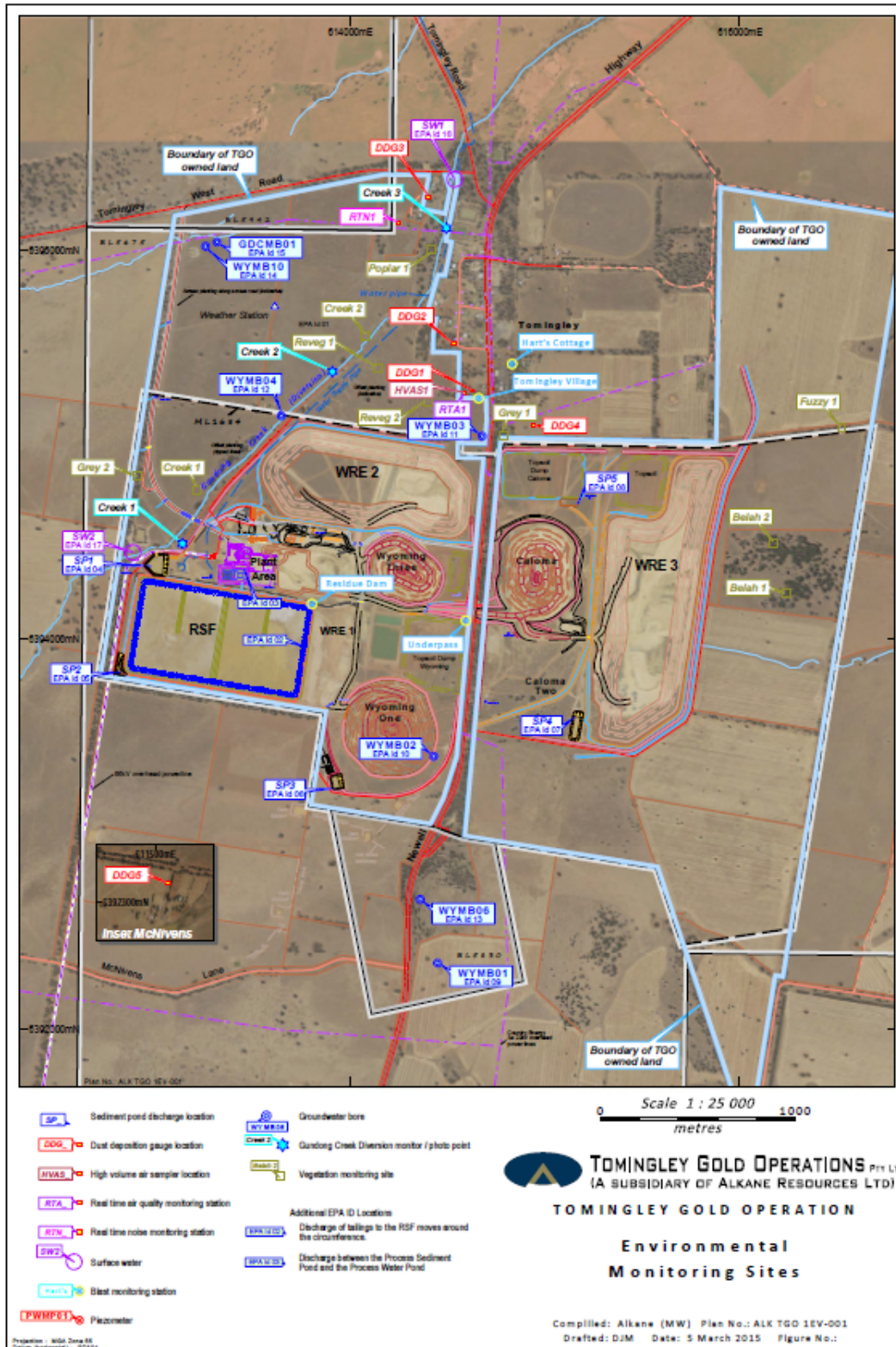
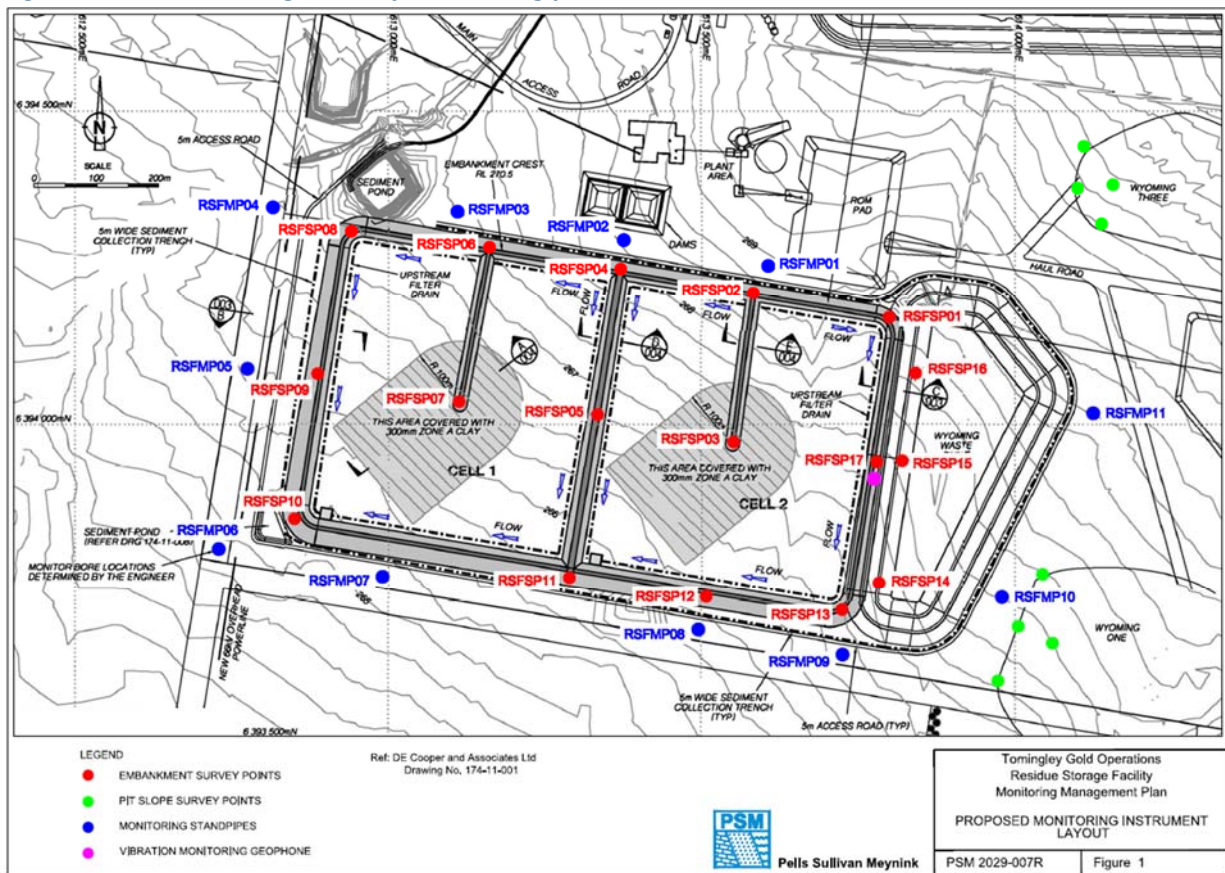


Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

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/m³ and a 24-Hour Average of 50ug/m³.

The 24 hour average limit not exceeded on any occasions during November.

Figure 5. TEOM Data November 2016

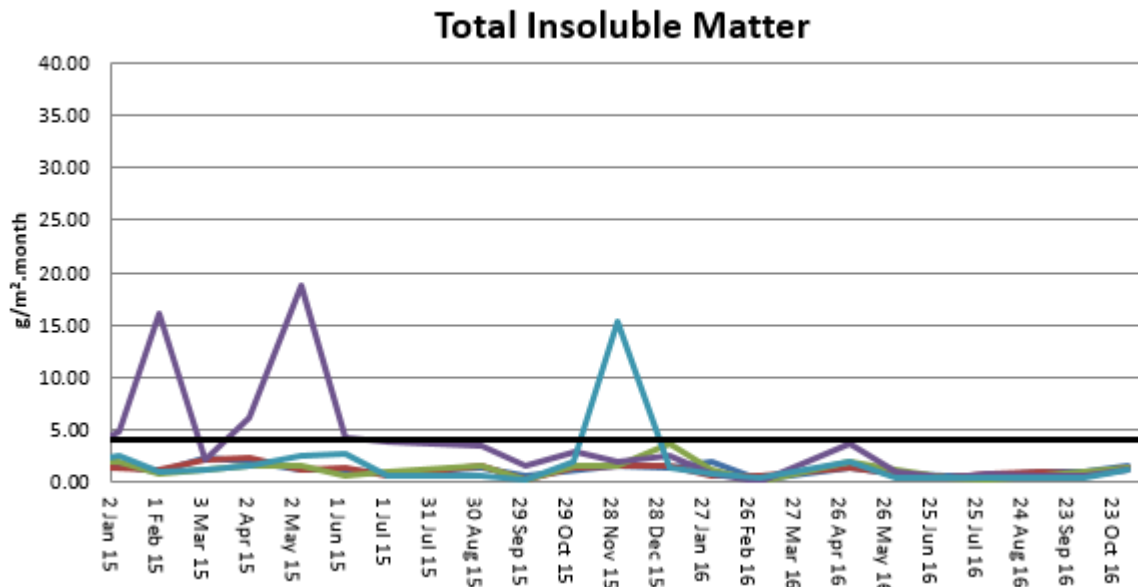
Date	24 Hr Averages	Running Average	Comment
	(µg/m3)		
1/11/2016	21.5	18.0	
2/11/2016	22.3	18.0	
3/11/2016	20.3	18.0	
4/11/2016	13.9	18.0	
5/11/2016	44.1	18.2	
6/11/2016	25.1	18.2	
7/11/2016	16.4	18.2	
8/11/2016	31.3	18.3	
9/11/2016	10.4	18.3	1 hr average data used
10/11/2016	21.4	18.3	
11/11/2016	18.0	18.3	1 hr average data used
12/11/2016	12.3	18.3	1 hr average data used
13/11/2016	21.2	18.3	
14/11/2016	19.3	18.3	
15/11/2016	34.9	18.4	
16/11/2016	29.3	18.5	
17/11/2016	17.1	18.5	
18/11/2016	19.5	18.5	
19/11/2016	23.2	18.4	
20/11/2016	21.3	18.4	
21/11/2016	24.5	18.4	
22/11/2016	31.8	18.4	
23/11/2016	36.2	18.4	
24/11/2016	21.3	18.3	
25/11/2016	26.4	18.3	
26/11/2016	26.1	18.2	
27/11/2016	43.6	18.2	
28/11/2016	35.1	18.2	
29/11/2016	32.6	18.2	
30/11/2016	40.6	18.2	
Average	25.4		
	24 Hour criteria exceedance		

Note: For comparison purposes highlighted results indicate levels above the EPA and NEPM 24-hour maximum criteria for PM₁₀

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 - 2016

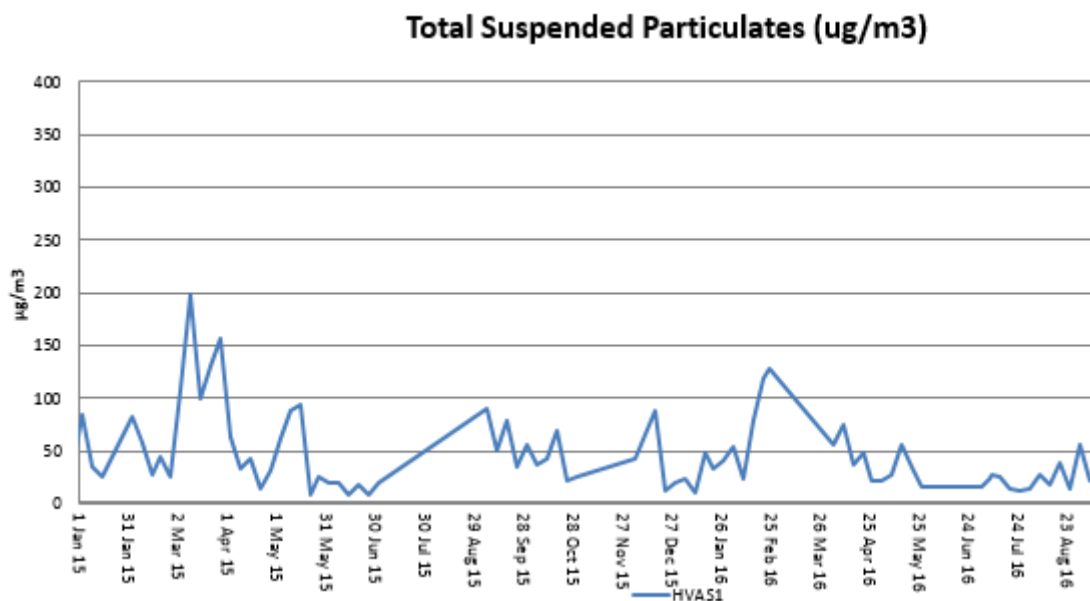


C. High Volume Air Sampler - Total Suspended Particulates

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 - 2016

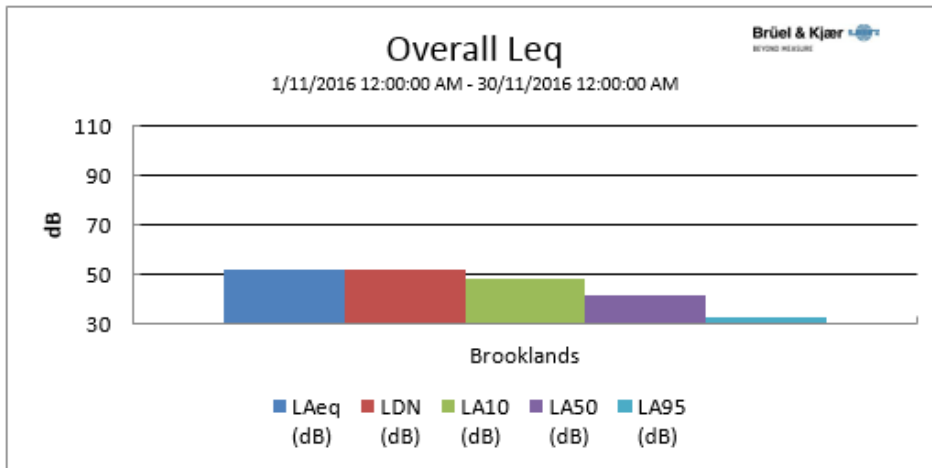


5. Noise Monitoring

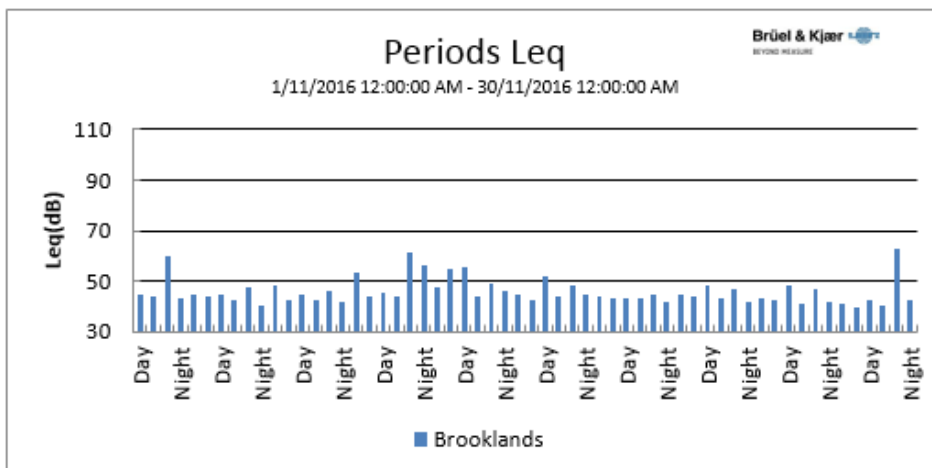
A. Real-Time Noise Monitoring

See real-time noise monitoring data presented below.

Figure 8. TGO Noise Monitoring 1/11/2016 - 30/11/2016



Location	Start Time	End Time	Activity	LDN (dB)	L _{Aeq} (dB)	L _{AF} (dB)	L _{AMin} (dB)	L _{A10} (dB)	L _{A50} (dB)	L _{A95} (dB)
Brooklands	1/11 12:00:00 AM	30/11 12:00:00 AM	100%	52.0	52.0	23.6	48.3	41.2	32.5	



6. Surface Water Monitoring

A. Gundong Creek

Gundong Creek flowed strongly over the course of the month.

Results of this sampling fell within the expected range.

Weekly sampling will be undertaken while the creek continues to flow.

B. Sedimentation Ponds

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

7. Groundwater Monitoring

Groundwater monitoring was not required to be undertaken during November.

A further round of sampling will be undertaken during December, in line with statutory requirements.

8. Blast Monitoring

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
73646	1/11/2016 13:14	0.26	Harts Cottage
73646	1/11/2016 13:14	0.57	Tomingley Village
73947	3/11/2016 12:59	0.06	Harts Cottage
73947	3/11/2016 12:59	0.1	Tomingley Village
73727	4/11/2016 12:59	0.21	Harts Cottage
73727	4/11/2016 12:59	0.37	Tomingley Village
73746	5/11/2016 12:59	0.44	Harts Cottage
73746	5/11/2016 12:59	0.6	Tomingley Village
73816	8/11/2016 12:58	0.17	Harts Cottage
73816	8/11/2016 12:58	0.35	Tomingley Village
73866	10/11/2016 15:01	0.4	Harts Cottage
73866	10/11/2016 15:01	0.88	Tomingley Village
73898	12/11/2016 13:58	0.11	Harts Cottage
73898	12/11/2016 13:58	0.3	Tomingley Village
73975	16/11/2016 14:34	0.55	Harts Cottage
73975	16/11/2016 14:34	0.91	Tomingley Village
74001	17/11/2016 12:59	0.4	Harts Cottage
74001	17/11/2016 12:59	0.84	Tomingley Village
74053	19/11/2016 12:59	0.3	Harts Cottage
74053	19/11/2016 12:59	0.64	Tomingley Village
74116	23/11/2016 11:01	0.07	Harts Cottage
74116	23/11/2016 11:01	0.08	Tomingley Village
74131	24/11/2016 13:39	0.32	Harts Cottage
74131	24/11/2016 13:39	0.61	Tomingley Village
74184	26/11/2016 12:59	0.57	Harts Cottage
74184	26/11/2016 12:59	0.98	Tomingley Village
74205	28/11/2016 12:59	0.06	Harts Cottage
74205	28/11/2016 12:59	0.1	Tomingley Village
74225	29/11/2016 12:58	0.26	Harts Cottage
74225	29/11/2016 12:58	0.65	Tomingley Village

9. Residue Storage Facility

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 100th percentile limit of 30ppm.

- Monthly average: 1.73 ppm
- Daily maximum: 6.98 ppm on 9th November
- Daily minimum: 0.38 ppm on 25th November
- Number of exceedances: zero

10. Biodiversity Monitoring

Fauna deaths:

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

Site Fauna

- On site fauna sightings for November included:
 - A number of snakes, suspected to be *Pseudonaja textilis*, were sighted in the Caloma two footprint.
 - 2 Tawny Frogmouth owls, *Podargus strigoides*, remain in residence adjacent to administration building
 - A number of Eastern Grey Kangaroos, *Macropus giganteus*, have been visible grazing in the Caloma 2 footprint and wester biodiversity area
 - Australian Wood Ducks, *Chenonetta jubata*, have been regularly spotted on sediment dams and farm dams around the site throughout August A single Red Backed Kingfisher, *Todiramphus pyrrhopygius*, was spotted roosting in trees around the Caloma 2 footprint
 - A wedge tailed eagle, *Aquila audax*, was sighted in the tree corridor along the site access road
 - Regularly throughout October Grey Crowned Babblers, *Pomatostomus temporalis*, were seen in the tree corridor to the South of the RSF.
 - A number of White Faced Herons, *Egretta novaehollandiae*, are continually spotted at the water point on the site access road.

Vertebrate pests

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