



TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

Tomingley Gold Project

Monthly Environmental Monitoring Report – December 2014



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Revision Number	Revision Date	Prepared By	Comments
Revision 1		Mark Williams	Submitted for Information

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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 December 2014.

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

2. WEATHER FOR DECEMBER 2014

2.1 WEATHER STATION DATA

TGO weather data is presented below.

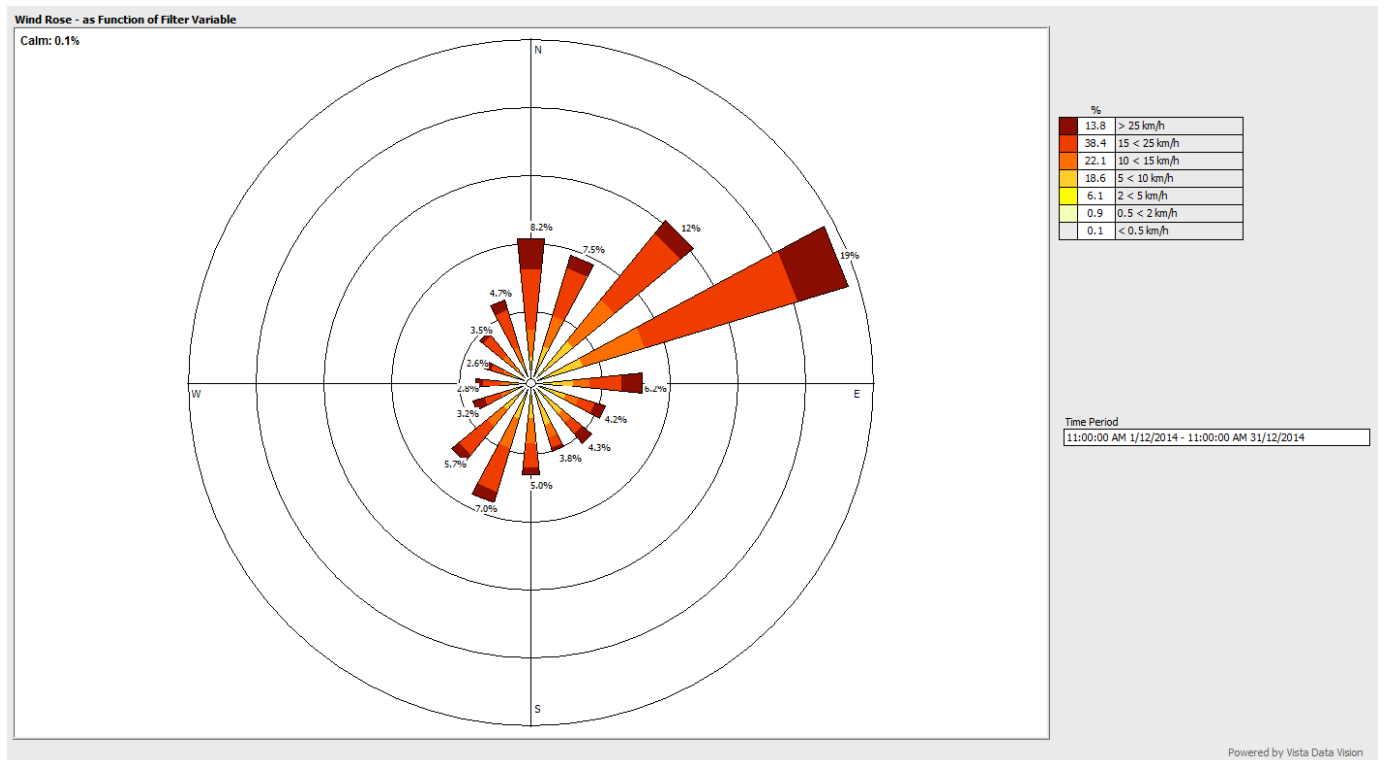


Figure 1. December 2014 wind monitoring station data

2.2 RAINFALL DATA

<i>December</i>	Amount (millimetres)
<i>1/12/2014</i>	1.8
<i>2/12/2014</i>	5.2
<i>3/12/2014</i>	5.6
<i>4/12/2014</i>	13.8
<i>6/12/2014</i>	7.0
<i>10/12/2014</i>	1.8
<i>11/12/2014</i>	2.2
<i>22/12/2014</i>	3.0
<i>23/12/2014</i>	10.4
<i>25/12/2014</i>	14.0
<i>26/12/2014</i>	0.2
Total	65.0 mm

Table 1. December 2014 rainfall data

3. MONITORING LOCATIONS

Figure 2 indicates the location of where monitoring is undertaken for the project. Any additional monitoring undertaken will be discussed within the body of this report.

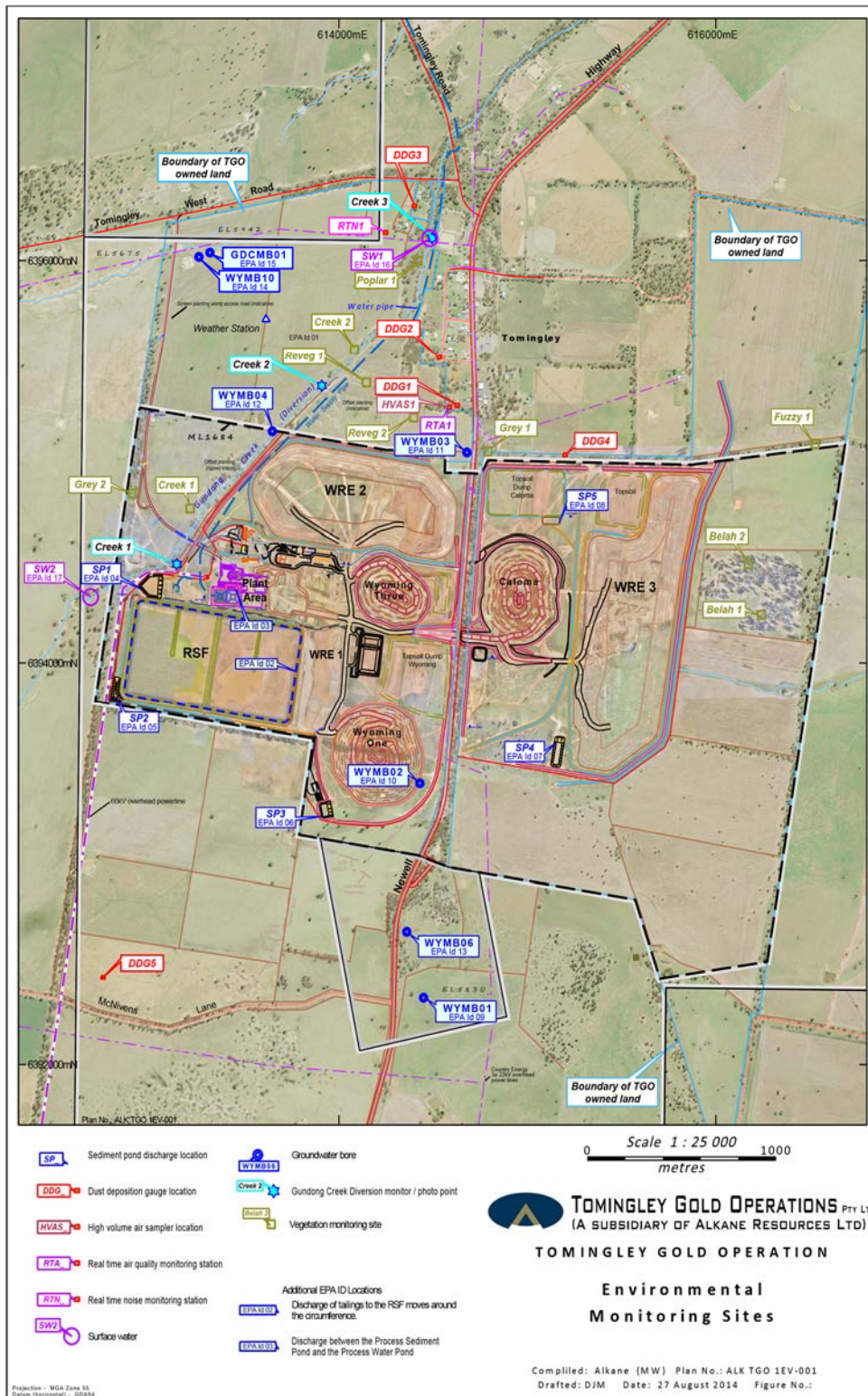


Figure 2. TGO water and vegetation monitoring points.

Figure 3 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

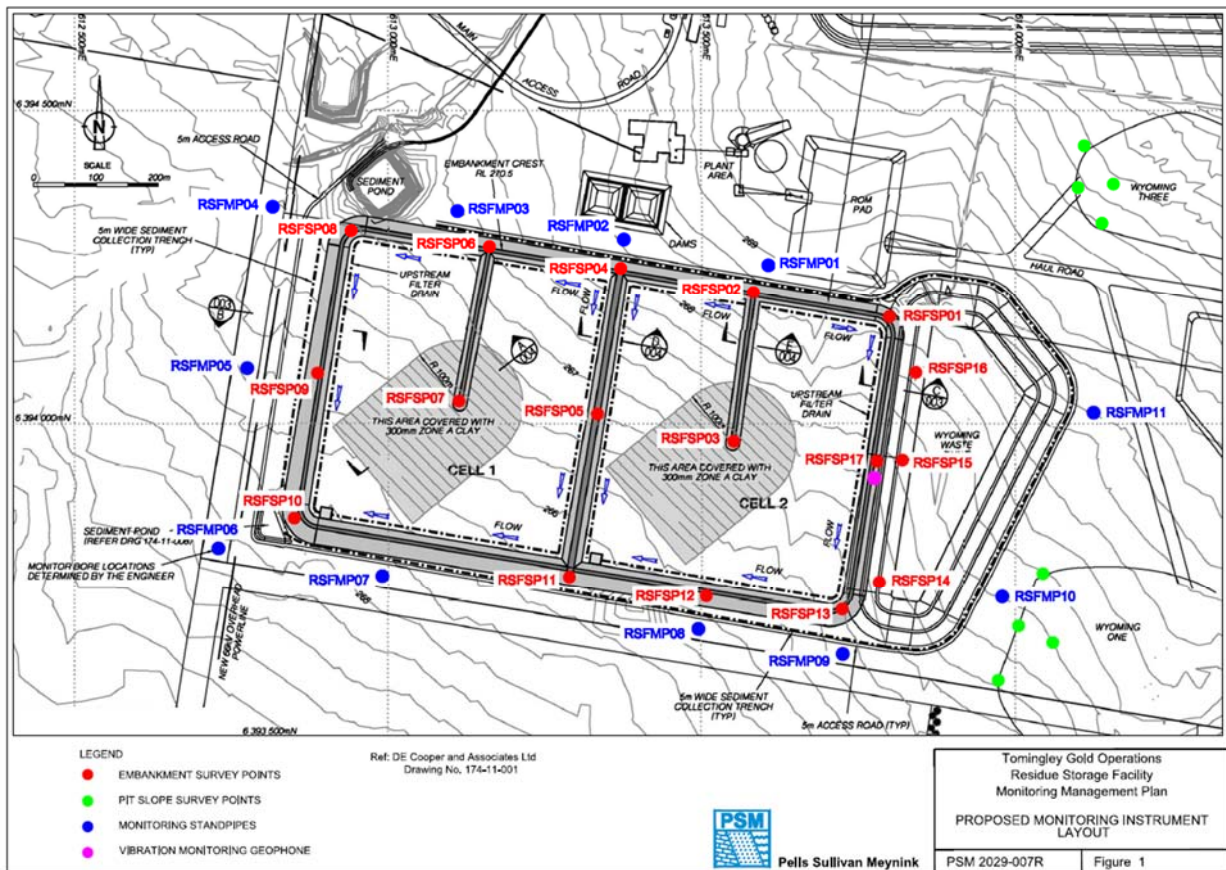


Figure 3. Residue Storage Facility monitoring points.

4. AIR QUALITY MONITORING

4.1 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 was exceeded four times this month however monthly average remained below the Annual Average figure.

Date	24 Hr Averages	Running Average	Comment
	(µg/m ³)		
1/12/2014	9.3	19.6	
2/12/2014	12.1	19.6	
3/12/2014	16.6	19.6	
4/12/2014	11.4	19.5	
5/12/2014	14.0	19.5	
6/12/2014	9.1	19.4	
7/12/2014	8.7	19.4	
8/12/2014	14.5	19.4	
9/12/2014	19.8	19.4	
10/12/2014	22.8	19.4	1 hr average data used
11/12/2014	13.5	19.4	1 hr average data used
12/12/2014	13.3	19.3	
13/12/2014	9.6	19.3	
14/12/2014	16.8	19.3	
15/12/2014	19.7	19.3	
16/12/2014	34.5	19.4	
17/12/2014	55.8	19.5	
18/12/2014	55.8	19.7	1 hr average data used
19/12/2014	58.9	19.9	
20/12/2014	36.7	19.9	
21/12/2014	25.0	20.0	
22/12/2014	28.4	20.0	
23/12/2014	11.7	20.0	
24/12/2014	12.2	19.9	
25/12/2014	<1	19.8	
26/12/2014	19.0	19.8	
27/12/2014	16.6	19.8	
28/12/2014	10.0	19.8	
29/12/2014	8.9	19.7	
30/12/2014	55.0	19.9	
31/12/2014	22.4	19.9	
Average	22.1		
	24 Hour criteria exceedance		

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

Table 2. Real time dust monitoring

4.2 DEPOSITIONAL DUST

Depositional Dust monitoring undertaken during December 2014 returned the results indicated in Table 3 below.

Location	Date Monitored	Insoluble solids (g/m ² /month)	Maximum increase in deposited dust level
DDG1	1/12/14 – 6/01/15	1.6	The greatest increase in deposited dust level was recorded at DDG4; an increase of 2.6 g/m ² /month
DDG2	1/12/14 – 6/01/15	1.6	
DDG3	1/12/14 – 6/01/15	1.9	
DDG4	1/12/14 – 6/01/15	4.8	
DDG5	1/12/14 – 6/01/15	2.8	

Table 3. Deposited Dust results for December 2014

4.3 HIGH VOLUME AIR SAMPLER - TOTAL SUSPENDED PARTICULATES

High Volume Air Sampling (HVAS) for Total Suspended Particulates (TSP) was undertaken this month. Table 4 below provides the results.

The performance criteria for TSP is averaged over 12 months

Location	Sheet ID	Date On	Date Off	Results (TSP µg/m ³)	Performance Criteria (Annual Average)
HVAS1	9036865	3 December 2014	4 December 2014	46.0	90 µg/m ³
HVAS1	9036866	9 December 2014	10 December 2014	47.0	
HVAS1	9036867	15 December 2014	16 December 2014	56.5	
HVAS1	9036868	21 December 2014	22 December 2014	70.5	
HVAS1	8890496	27 December 2014	28 December 2014	31.5	

Table 4. High Volume Air Sampler Data for December 2014

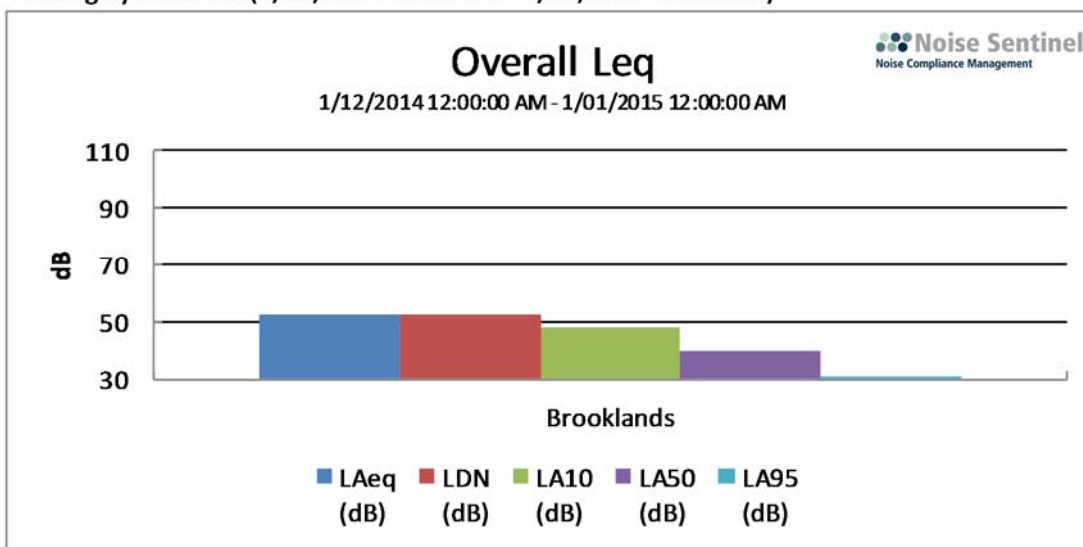
5. NOISE MONITORING

5.1 REAL-TIME NOISE MONITORING

See real-time noise monitoring data presented below.

Long Period

Tomingley Gold Site (1/12/2014 12:00 AM - 1/01/2015 12:00 AM)



Overall Data

Location	Start Time	End Time	Activity	LDN (dB)	L _{Aeq} (dB)	L _{AMin} (dB)	L _{A10} (dB)	L _{A50} (dB)	L _{A95} (dB)
Brooklands	1/12 12:00:00 AM	1/01 12:00:00 AM	100%	52.4	52.4	22.1	47.8	40.3	30.3

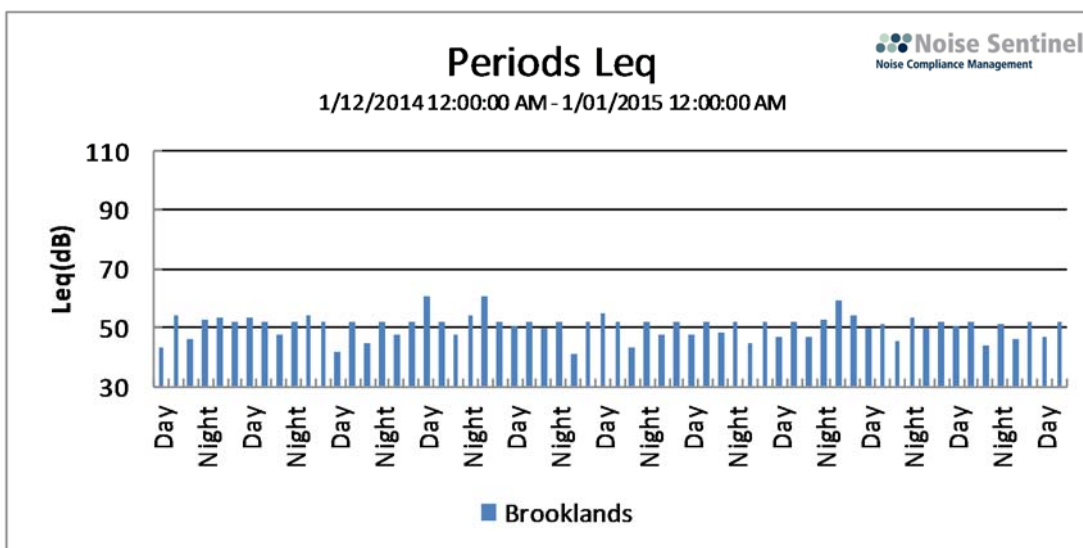


Figure 4. Fixed, real time noise monitoring data.

6. SURFACE WATER MONITORING

6.1 GUNDONG CREEK

Gundong Creek did not run the reporting period and hence water sampling did not occur.

6.2 SEDIMENTATION PONDS

No discharge or water testing occurred this month.

7. GROUNDWATER MONITORING

Groundwater monitoring is carried out quarterly and was completed in December. Results are pending and will be presented in January 2015 monthly report.

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 Harts Cottage and Tomingley Village.

EventKey	Event	Date/Time	Max R (mm/s)	Max AB (Pa)	Max AB (dBL)	Monitor location
58871	TMG042	30/12/2014 12:59	0.39	7.32	111.3	Harts Cottage
58835	TMG041	27/12/2014 13:04	0.09	1.27	96.1	Harts Cottage
58799	TMG040	24/12/2014 13:00	0.18	2.51	102	Harts Cottage
58764	TMG03Z	22/12/2014 12:59	0.16	1.72	98.7	Harts Cottage
58747	TMG03Y	20/12/2014 10:37	0.29	3.59	105.1	Harts Cottage
58734	TMG03X	19/12/2014 12:59	0.21	2.25	101	Harts Cottage
58696	TMG03W	17/12/2014 12:57	0.43	4.39	106.8	Harts Cottage
58596	TMG03V	12/12/2014 12:58	0.25	2.82	103	Harts Cottage
58552	TMG03U	10/12/2014 12:58	0.15	2.97	103.4	Harts Cottage
58456	TMG03T	8/12/2014 13:09	0.2	2.87	103.1	Harts Cottage
58363	TMG03S	5/12/2014 12:59	0.16	0.95	93.5	Harts Cottage
58305	TMG03R	4/12/2014 13:06	0.12	0.79	91.9	Harts Cottage
58222	TMG03Q	1/12/2014 13:03	0.21	1.66	98.4	Harts Cottage
58220	TMG03P	1/12/2014 12:55	0.2	0.76	91.6	Harts Cottage
58871	TMG042	30/12/2014 12:59	0.43	7.42	111.4	Tomingley Village
58835	TMG041	27/12/2014 13:04	0.09	1.5	97.5	Tomingley Village
58799	TMG040	24/12/2014 13:00	0.19	2.66	102.5	Tomingley Village
58764	TMG03Z	22/12/2014 12:59	0.22	1.91	99.6	Tomingley Village
58747	TMG03Y	20/12/2014 10:37	0.24	4.08	106.2	Tomingley Village
58734	TMG03X	19/12/2014 12:59	0.17	5.33	108.5	Tomingley Village
58696	TMG03W	17/12/2014 12:57	0.59	6.22	109.9	Tomingley Village
58596	TMG03V	12/12/2014 12:58	0.27	2.97	103.4	Tomingley Village
58552	TMG03U	10/12/2014 12:58	0.18	1.21	95.6	Tomingley Village
58456	TMG03T	8/12/2014 13:09	0.24	2.21	100.9	Tomingley Village
58363	TMG03S	5/12/2014 12:59	0.23	0.79	91.9	Tomingley Village
58305	TMG03R	4/12/2014 13:06	0.16	0.77	91.7	Tomingley Village
58222	TMG03Q	1/12/2014 13:03	0.24	2.07	100.3	Tomingley Village
58220	TMG03P	1/12/2014 12:55	0.31	1.12	94.9	Tomingley Village

Table 5. Blast monitoring

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.

The WAD results for this month are:

- Monthly average: 6.22 ppm
- Daily maximum: 12.3 ppm on 12 December 2014
- Daily minimum: 0.2475 ppm on 7 December 2014
- Number of exceedances: zero

10. BIODIVERSITY MONITORING

- Native fauna sightings:
 - Two Wedge-tailed Eagles were seen over the Wyoming side of site.
 - Groups of Grey-crowned Babblers were seen in the tree corridors at the south western edge of site and north eastern corridor.
 - Two Black-winged Stilts were noticed flying over the RSF.
 - A Spotted Harrier was seen flying in the vicinity of the RSF.

 - A deceased female Teal was found in the vicinity of the RS F and was taken to a local veterinarian for post mortem analysis.

- Native animal rescue:
 - No animal rescue was undertaken this month.

- Vertebrate pests:
 - A foxes and hares observed frequently across the site during the days and nights.