TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)
ABN 53 149 040 371

TOMINGLEY GOLD PROJECT

Monthly Environmental Monitoring Report

September 2018

TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)
ABN 53 149 040 371

TOMINGLEY GOLD PROJECT

Monthly Environmental Monitoring Report

September 2018

Document History

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

Table of Contents

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 September 2018.

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

2. Weather for September 2018

A. Weather Station Data

TGO WEATHER DATA IS PRESENTED BELOW.

Figure 1. September 2018 wind rose

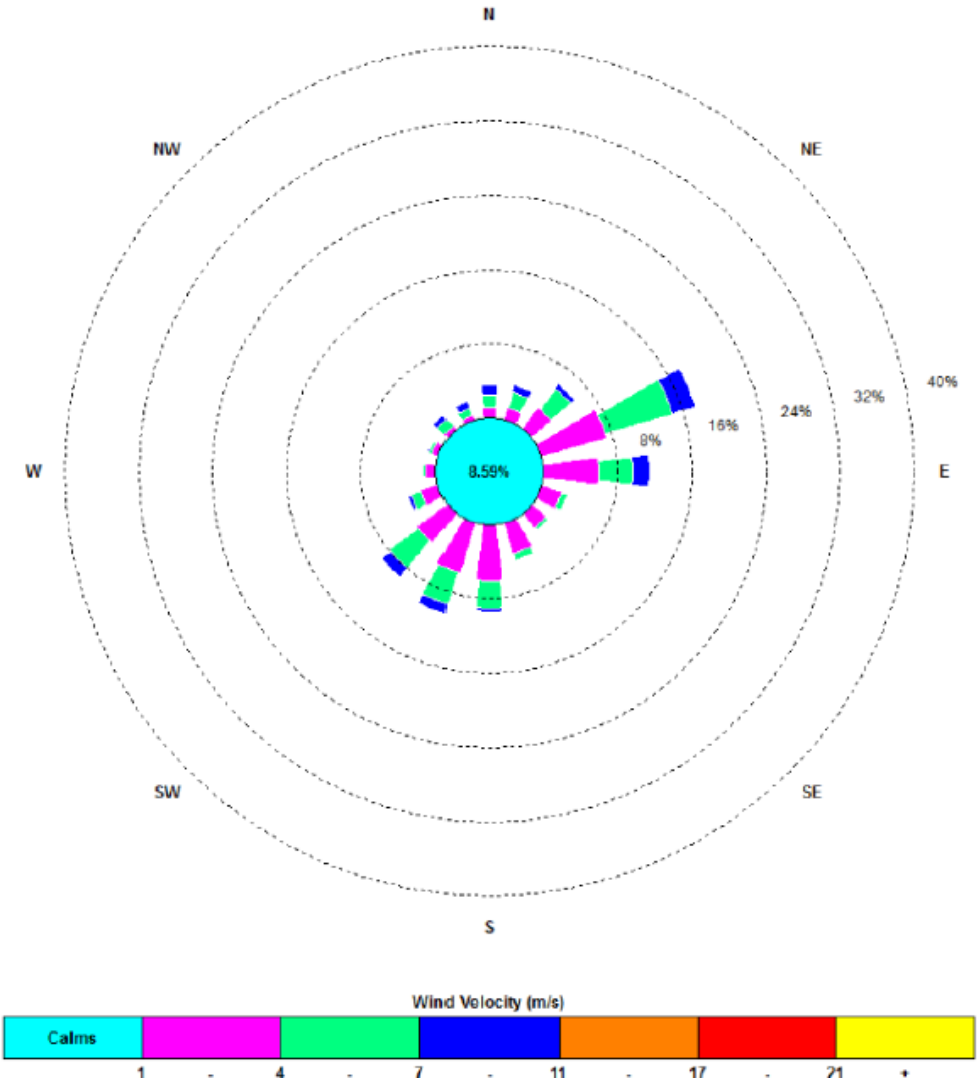


Figure 2. Rainfall September 2018

September 2018	Rainfall (mm)
September 1	2.2
September 6	12.0
September 7	0.2
September 8	0.2
Total Rainfall	14.6

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

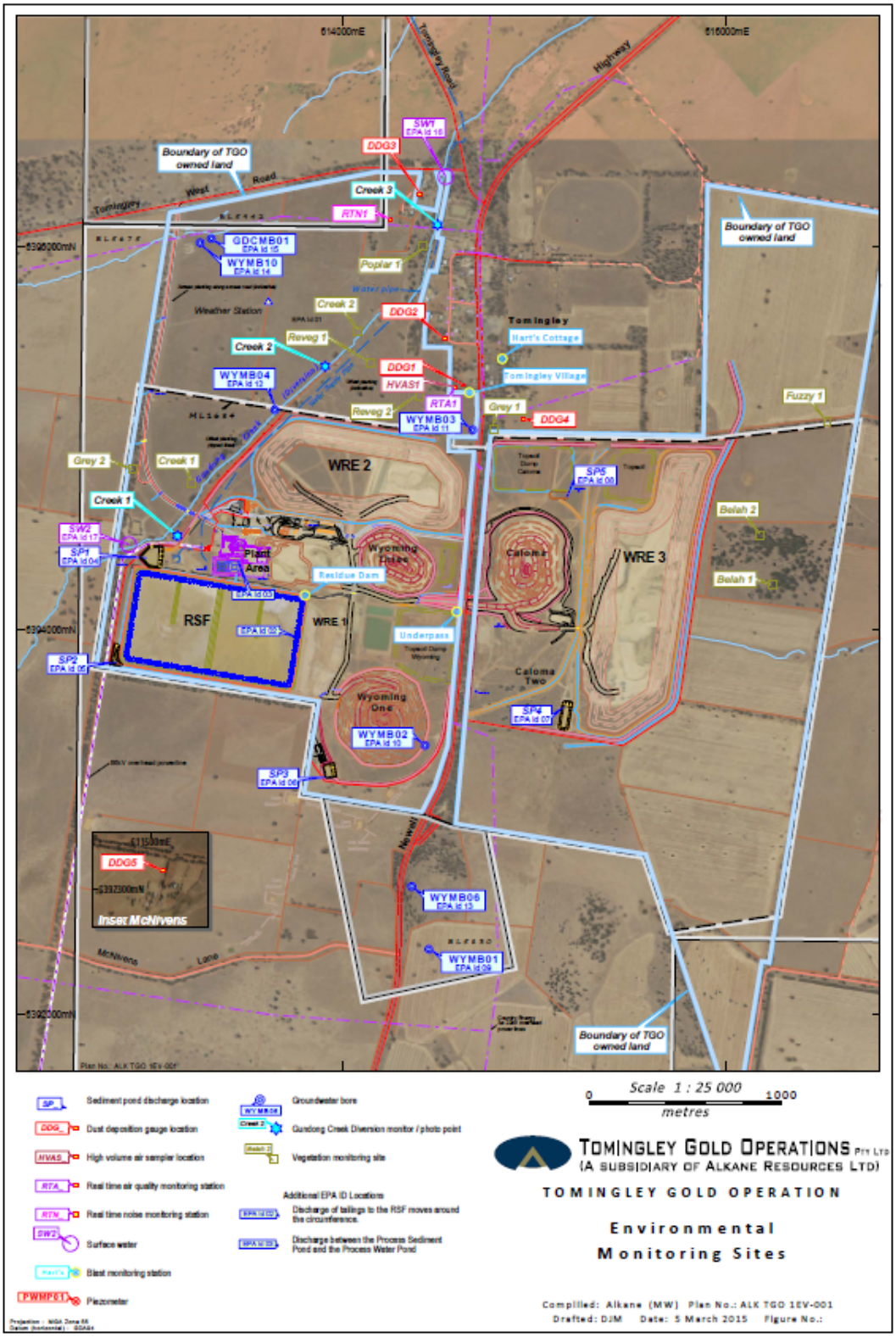
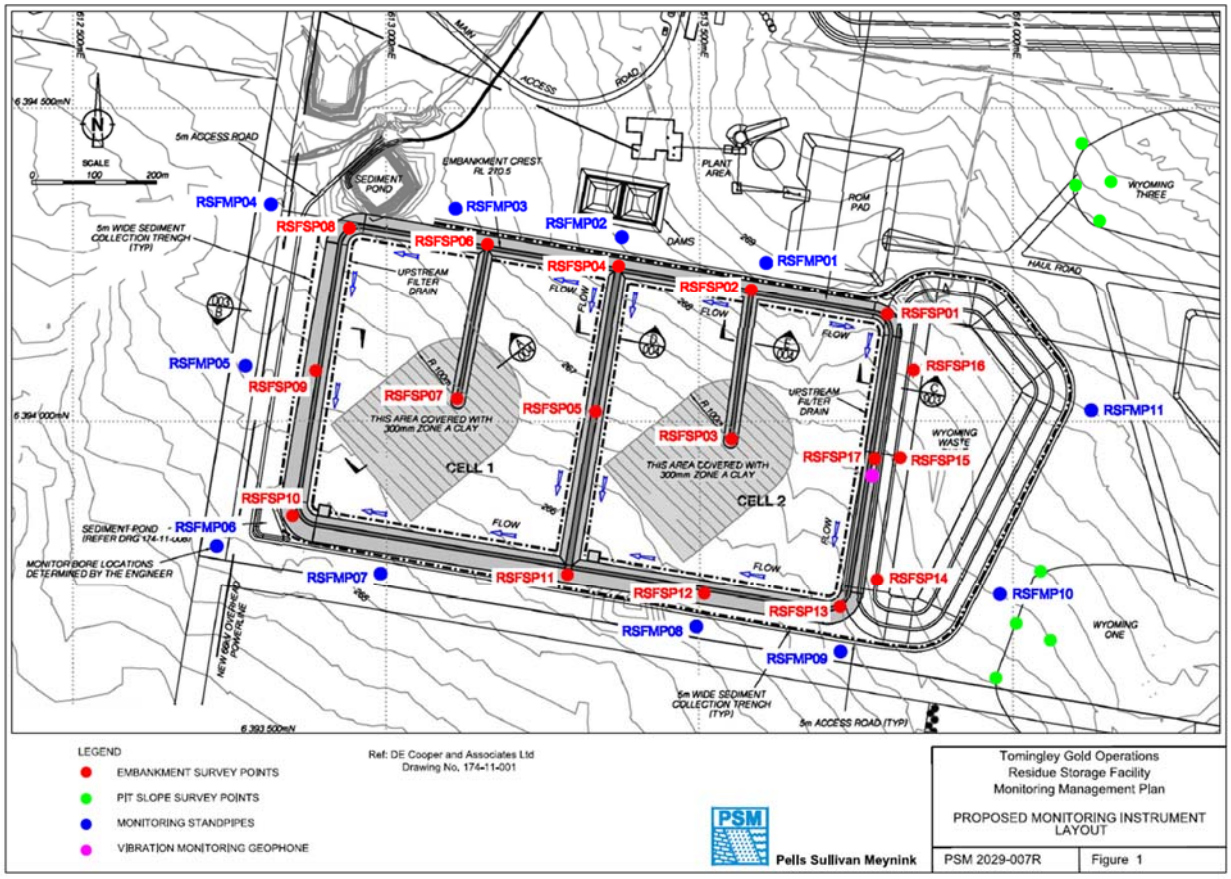


Figure 4 indicates the location of environmental and survey monitoring points on and around the Residue Storage Facility.

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^3 and a 24-Hour Average of 50ug/m^3.

The annual average at the end of June was 22.9ug/m^3, well below the license limit.

There was 1 high reading during the month as a result of strong winds combined with regional dust creating dust storm conditions. This was as a result of the drought and not a result of mining activity. TGO has kept all government agencies informed of the ongoing high dust levels in the region.

Figure 5. TEOM Data September 2018

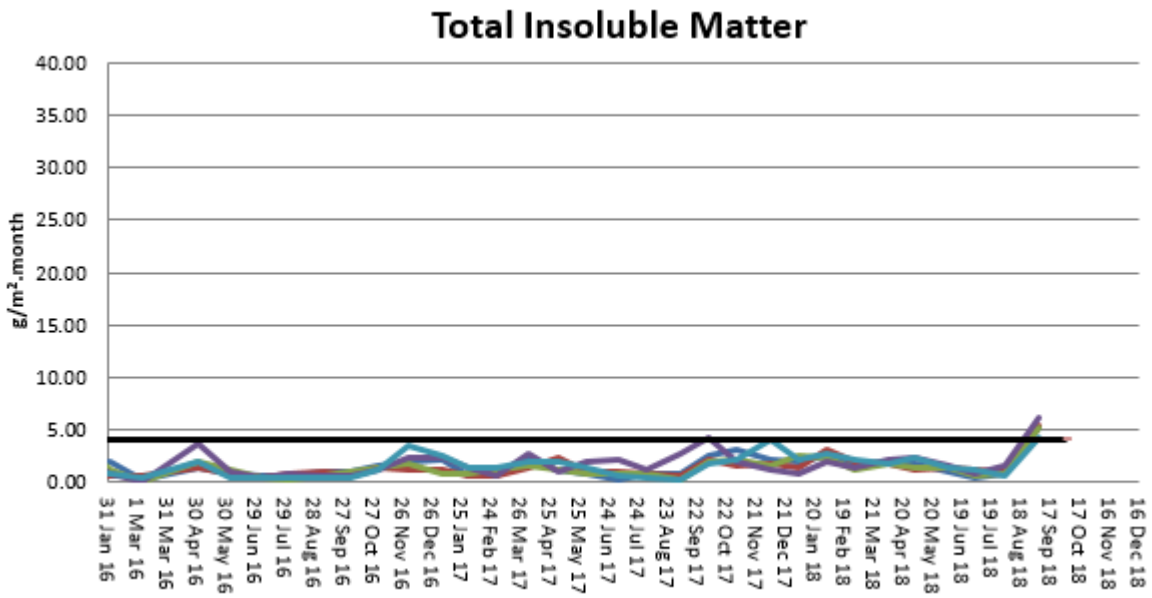
Date	24 Hr Averages	Running Average	Comment
	(µg/m3)		
1/09/2018	19.3	23.6	
2/09/2018	8.9	23.6	
3/09/2018	11.6	23.4	
4/09/2018	6.6	23.3	
5/09/2018	8.8	23.3	
6/09/2018	17.7	23.3	
7/09/2018	9.6	23.2	
8/09/2018	9.6	23.1	
9/09/2018	15.9	23.1	
10/09/2018	14.6	23.1	
11/09/2018	21.5	23.1	
12/09/2018	29.6	23.1	
13/09/2018	22.4	23.1	
14/09/2018	19.0	23.1	
15/09/2018	67.7	23.2	
16/09/2018	18.1	23.2	
17/09/2018	16.4	23.2	
18/09/2018	35.1	23.3	
19/09/2018	29.5	23.3	
20/09/2018	27.6	23.3	
21/09/2018	21.8	23.3	
22/09/2018	25.5	23.3	
23/09/2018	23.7	23.1	
24/09/2018	22.3	23.0	
25/09/2018	15.9	23.0	
26/09/2018	13.2	23.0	
27/09/2018	11.8	22.9	
28/09/2018	40.5	22.9	
29/09/2018	23.2	22.9	
30/09/2018	18.5	22.9	
Average	**20.8**		
	24 Hour Criteria Exceedance		

Note: For comparison purposes, highlighted results indicate levels above the EPA and NEPM 24-hour maximum criteria for PM_{10}.

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 with a maximum total average of 4g/m2/month. A sharp increase in results is a result of a number of dust storms in the area due to ongoing drought conditions not a result of mining activity. TGO has kept all government agencies informed of the ongoing high dust levels in the region.

Figure 6. Dust Deposition Results 2016 - 2018

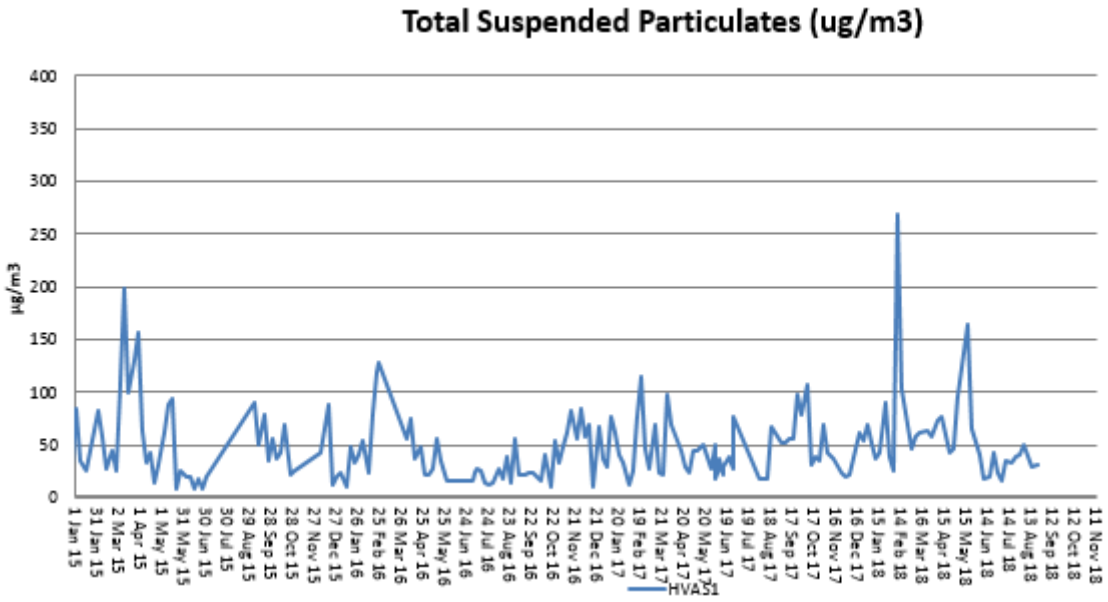


C. High Volume Air Sampler - Total Suspended Particulates

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 - 2018


Total Suspended Particulates (ug/m3)
ug/cu m
400
350
300
250
200
150
100
50
0
1 Jan 15
31 Jan 15
2 Mar 15
1 Apr 15
1 May 15
31 May 15
30 Jun 15
30 Jul 15
29 Aug 15
28 Sep 15
28 Oct 15
27 Nov 15
27 Dec 15
26 Jan 16
25 Feb 16
26 Mar 16
25 Apr 16
25 May 16
24 Jun 16
24 Jul 16
23 Aug 16
22 Sep 16
22 Oct 16
21 Nov 16
21 Dec 16
20 Jan 17
19 Feb 17
21 Mar 17
20 Apr 17
20 May 17
19 Jun 17
19 Jul 17
18 Aug 17
17 Sep 17
17 Oct 17
16 Nov 17
16 Dec 17
15 Jan 18
14 Feb 18
16 Mar 18
15 Apr 18
15 May 18
14 Jun 18
14 Jul 18
13 Aug 18
12 Sep 18
12 Oct 18
11 Nov 18

5. Noise Monitoring

A. Real-Time Noise Monitoring

Real-time noise monitoring data showed no exceedances during the month of September. Full report provided separately on webpage.

6. Surface Water Monitoring

A. Gundong Creek

Gundong Creek did not flow during September and as such no samples were taken.

B. Sedimentation Ponds

No discharge was experienced from any of the sediment ponds during the month.

7. Groundwater Monitoring

Groundwater was undertaken during September in line with license requirements.

Results from this round of monitoring fell within expected limits.

A further round of monitoring will be undertaken in December.

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 8. Blast Monitoring

EventKey	Date/Time	Max R (mm/s)	Location
90322	1/09/2018 15:09	0.07	Harts Cottage
90322	1/09/2018 15:09	0.09	Tomingley Village
90428	6/09/2018 13:59	0.06	Harts Cottage
90428	6/09/2018 13:59	0.11	Tomingley Village
90535	12/09/2018 13:20	0.1	Harts Cottage
90535	12/09/2018 13:20	0.1	Tomingley Village
90663	17/09/2018 12:57	0.11	Harts Cottage
90663	17/09/2018 12:57	0.14	Tomingley Village
90789	22/09/2018 12:55	0.12	Harts Cottage
90789	22/09/2018 12:55	0.11	Tomingley Village
90977	29/09/2018 12:59	0.07	Harts Cottage
90977	29/09/2018 12:59	0.11	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: 4.95 ppm
- Daily maximum: 17.21 ppm on 28th September
- Daily minimum: 2.47 ppm on 1st September
- Number of exceedances: zero

10. Biodiversity Monitoring

Fauna deaths:

- No fauna deaths were recorded during September.