

Licensee	Aurelia Metals Limited
Address	'The Peak, Burthong Road, Nymagee, NSW 2831
Environmental Protection Licence	20179
Link to Licence	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32372&SYSUID=1&LICID=20179
Project Approval	10_0191
Reporting Period	March 2016
Date Published	2/05/2016

Weather Monitoring

Aurelia Metals Limited (AMI) has one licenced weather station (licence point 23) associated with the site (**Figure 1**). A summary of the licence conditions (Environmental Protection Licence (EPL) 20179) associated with this point is presented in **Table 1**.

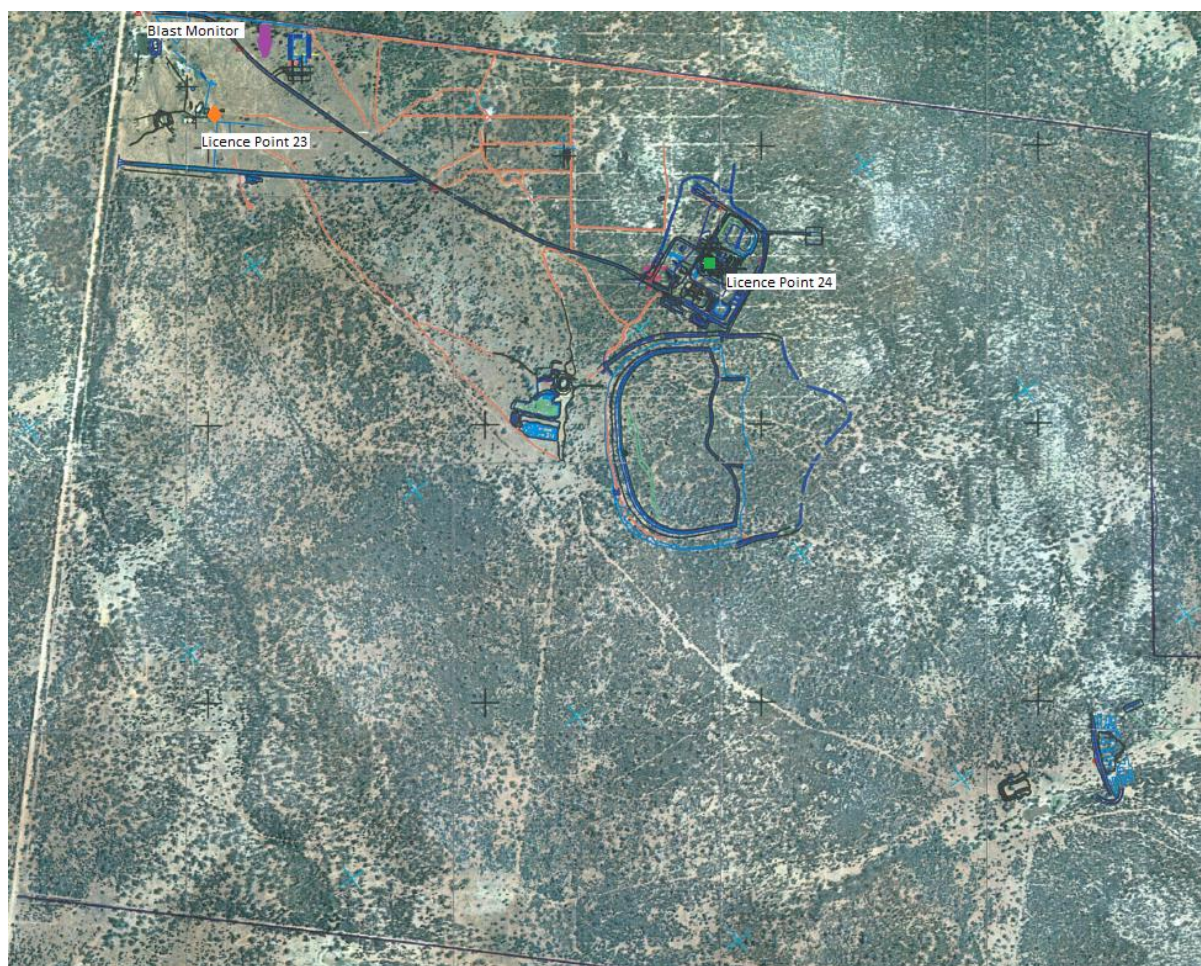


Figure 1. Location of the licence points associated with Gold Room Stack monitoring (Licence Point 24), Blast monitoring and meteorological monitoring (Licence Point 23).

Table 1. Summary of EPL 20179 conditions associated with the licensed weather station.

Parameter	Frequency
Air Temperature (°C)	Continuous
Wind Direction (°)	Continuous
Wind Speed (m/s)	Continuous
Sigma Theta (°)	Continuous
Rainfall (mm)	Continuous
Relative Humidity (%)	Continuous

Meteorological monitoring is conducted on a continuous basis. **Table 2** is a summary of the data collected by the weather station in March 2016.

Table 2. Summary of meteorological data for March 2016.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	3.85	23.44	23.82	36.49
Wind Direction (°)	Continuous	16.21	146.64	151.88	330.86
Wind Speed (m/s)	Continuous	0.00	1.90	1.78	9.86
Sigma Theta (°)	Continuous	2.32	22.50	16.93	100.48
Rainfall (mm)	Continuous	0.00	0.00	0.00	2.00
Relative Humidity (%)	Continuous	19.01	51.89	49.48	98.31

Surface Water Monitoring

AMI has six licence points associated with surface waters. Four of these points are located within the Mining Lease (**Figure 2**) and two are located on Box creek, upstream and downstream of the mining lease (**Figure 3**). A summary of the licence conditions associated with these licence points is presented in **Table 3**.

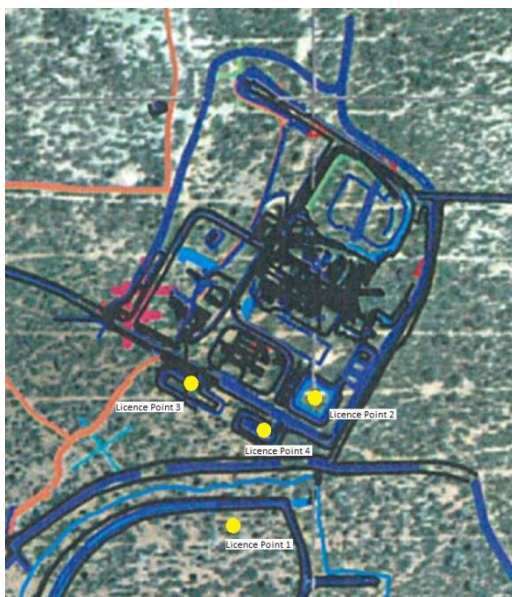


Figure 2. Licensed surface water monitoring points located onsite.

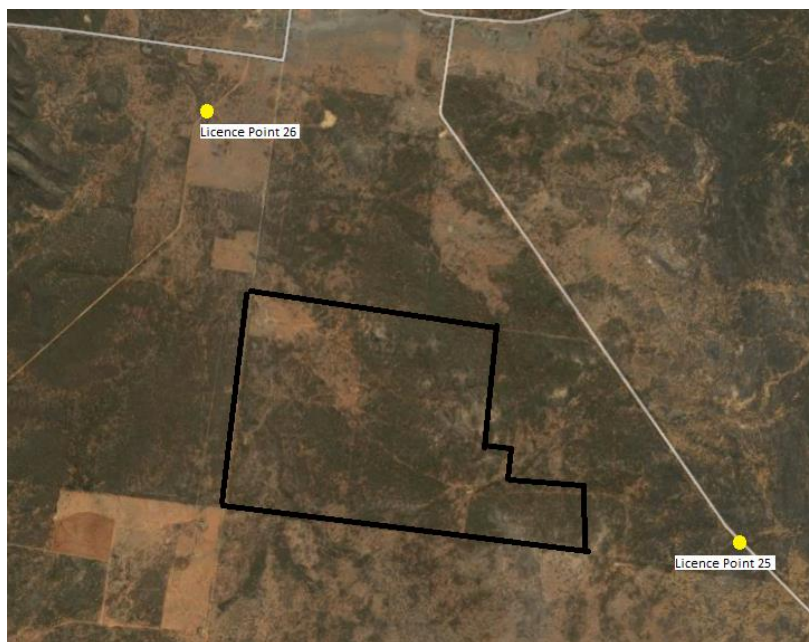


Figure 3. Licensed surface water monitoring points located offsite. The black outline represents the Project Area.

Table 3. Summary of EPL 20179 conditions associated with licensed surface water monitoring points.

EPA ID No.	Monitoring Frequency	Limit
1, 2	Daily during discharge	
3, 4, 25, 26	During discharge	
	Pollutant	
1	Cyanide (weak acid dissociable (WAD))	10 mg/L
2	Cyanide (WAD)	20 mg/L (90 percentile limit)
		30 mg/L (max. limit)
3, 4, 25, 26 (Please note: Limits apply only to Licence Points 3 and 4.)	Aluminium	0.055 mg/L
	Arsenic	0.024 mg/L
	Boron	0.370 mg/L
	Cadmium	0.0002 mg/L
	Copper	0.0014 mg/L
	Cyanide (WAD)	0.007 mg/L
	Electrical Conductivity	1000 (µS/cm)
	Lead	0.0034 mg/L
	Manganese	1.90 mg/L
	Nickel	0.011 mg/L
	Nitrogen (total)	0.5 mg/L
	Oil and Grease	10 mg/L
	pH	6.5-8.5
	Phosphorus (total)	0.025 mg/L
	Silver	0.00005 mg/L
	Total suspended solids	50 mg/L
Zinc	0.008 mg/L	

Table 4 is a summary of the surface water quality results. The table has also been colour coordinated by the licence limit that applies to each licence point. Licence Point 3, 4, 25 and 26 did not discharge for the month.

Table 4. Summary of surface water quality results for March 2016.

	Analytes (mg/L)																			
	WAD Cyanide				Al	As	B	Cd	Cu	EC ($\mu\text{S/cm}$)	Pb	Mn	Ni	N	Oil & Grease	pH	Ag	P	TSS	Zn
	Min.	Mean	Median	Max.																
Licence Limits	10				0.055	0.024	0.37	0.0002	0.0014	1000	0.0034	1.9	0.011	0.5	10	6.5-8.5	0.00005	0.025	50	0.008
	20 (90 Percentile)																			
	30 (max.)																			
	0.007																			
Licence Points																				
1	0	0	0	0																
2	0	0.48	0	10																
3	No discharge																			
4	No discharge																			
25	No discharge																			
26	No discharge																			

Groundwater Monitoring

AMI has 13 licence points associated with groundwater. These points are located within the Mining Lease (**Figure 4**) and are a combination of observation bores and productions bores. A summary of the licence conditions associated with these licence points is presented in **Table 5**.

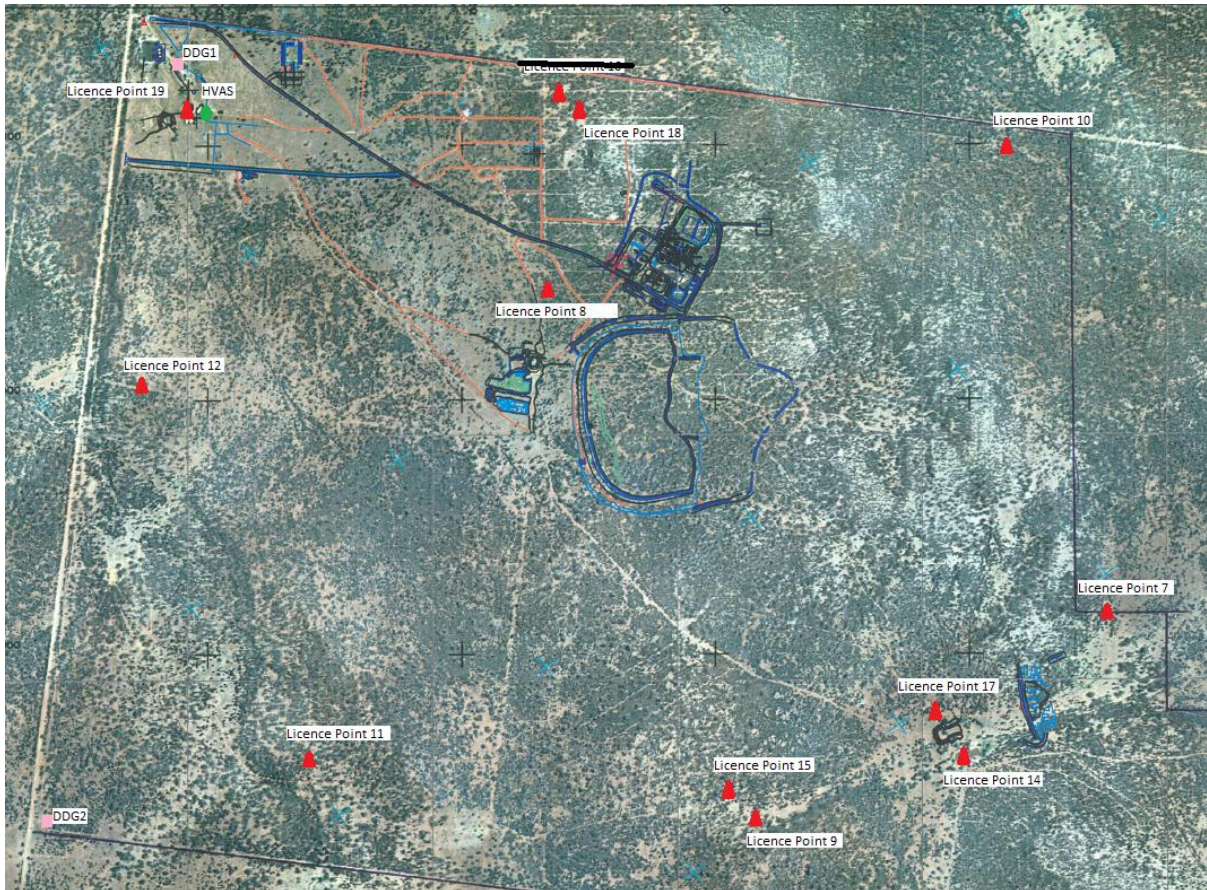


Figure 4. Licensed groundwater and air quality monitoring points.

Table 5. Summary of EPL 20179 conditions associated with licensed groundwater monitoring points.

EPA ID No.	Monitoring Frequency
	Quarterly
	Pollutant
7, 8, 9, 10, 11, 14, 15, 17, 18, 19	Antimony (mg/L)
	Arsenic (mg/L)
	Bicarbonate (mg/L)
	Boron (mg/L)
	Cadmium (mg/L)
	Calcium (mg/L)
	Carbonate (mg/L)
	Chloride (mg/L)
	Chromium (mg/L)
	Copper (mg/L)
	Cyanide (free) (mg/L)
	Cyanide (total) (mg/L)
	Cyanide (WAD) (mg/L)
	Electrical Conductivity ($\mu\text{S}/\text{cm}$)
	Iron (mg/L)
	Lead (mg/L)
	Magnesium (mg/L)
	Mercury (mg/L)
	Molybdenum (mg/L)
	Nickel (mg/L)
	pH
	Potassium (mg/L)
	Silver (mg/L)
	Sodium (mg/L)
7, 8, 10, 12, 14, 15, 17, 18	Standing Water Level (m)

Groundwater quality is monitored on a quarterly basis. The next round of sampling will be conducted in April 2016.

Noise Monitoring

AMI has four licenced monitoring points (R1, R2, R3 and R4) located along the Burthong Road (**Figure 5**). The locations are strategically placed near AMI's nearest neighbours. R1 and R2 are measured from the same point as both neighbours are located in very close proximity to each other. A summary of the EPL and Project Approval (PA) conditions associated with these licenced points is presented in **Table 6**.

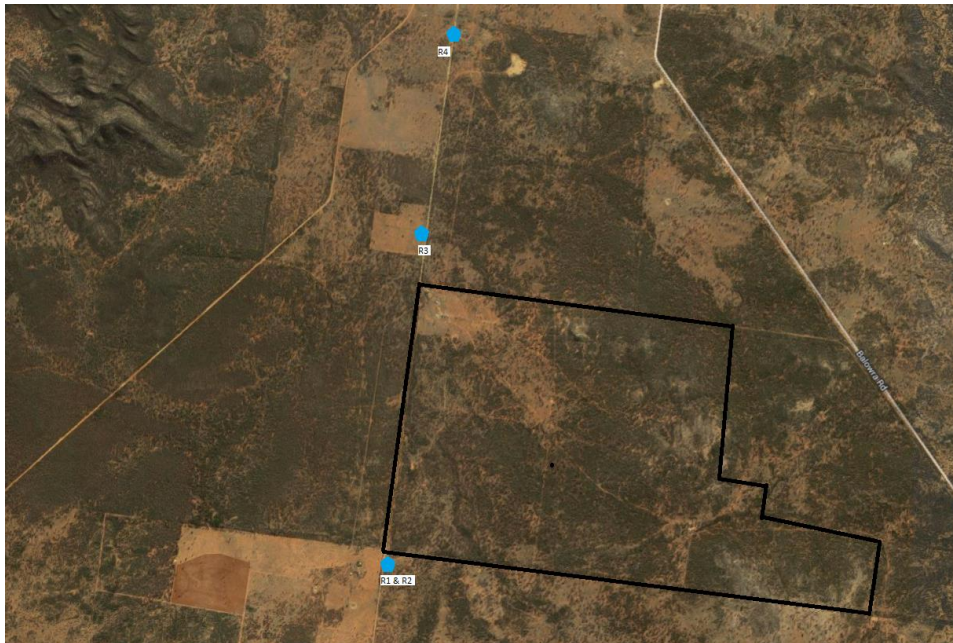


Figure 5. Licensed noise monitoring locations. The black outline represents the Mining Lease.

Table 6. Summary of EPL 20179 conditions associated with noise monitoring.

Location	Pollutant - Noise	Limits
R1, R2, R3, R4	Monday to Friday - 0700 hours (hrs) to 1800 hrs	LAeq (15 minute) 35 decibels (dB)
	Monday to Friday - 1800 hrs to 2200 hrs	LAeq (15 minute) 35 dB
	All other times	LAeq (15 minute) 35 dB
		LA1 (1 minute) 45 dB

Table 7 is a summary of the noise results for the month. One LAeq result was recorded above licence conditions. However, the mine was inaudible during this period and the wind speed was greater than 3 meters per second (m/s) invalidating the result (as stipulated in the Project Approval).

Table 7. Summary of noise monitoring results for March 2016.

Date	Time	Site	Period of day	Wind speed (m/s)	LA1 (dB)	LAeq (dB)	Mine Audible?	Noise heard
30/03/2016	22:00	R1/R2	Night	2.20	35.3	20.88	No	Wind, dogs barking in distance
30/03/2016	22:48	R3	Night	1.33	32	14.56	No	Wind, crickets
30/03/2016	22:26	R4	Night	1.58	32.7	22.57	Yes	wind, crickets, vent fan
23/03/2016	16:35	R1/R2	Day	2.24	n/a	28.57	No	Wind, birds, crickets
23/03/2016	16:10	R3	Day	2.31	n/a	25.25	No	Wind, birds, crickets
23/03/2016	15:47	R4	Day	3.11	n/a	60.16	No	Wind, birds, aeroplane, passing car
30/03/2016	21:40	R1/R2	Evening	2.69	n/a	19.94	No	Wind
30/03/2016	21:10	R3	Evening	2.02	n/a	18.57	No	wind, crickets, gunshots in distance
30/03/2016	20:48	R4	Evening	2.25	n/a	22.60	Yes	Wind, crickets, vent fan

Blast Monitoring

AMI is required to monitor blasting. The monitor is located to the east of the personnel accommodation (**Figure 1**). A summary of the EPL and PA conditions associated with this licenced point are presented in **Table 8**.

Table 8. Summary of EPL 20179 and PA 10_0191 conditions associated with blast monitoring.

Location	Pollutant	Time Period	Limits
Blast monitoring	Ground vibration <i>(monitor for every blast)</i>	All times	10 mm/s (max.)
		Day	5 mm/s (95% of total blasts)
		Evening	2 mm/s (95% of total blasts)
		Night and all day on Sundays and Public Holidays)	1 mm/s (max.)
	Airblast overpressure	All times	120 dB (max.)
	<i>(monitor for every blast)</i>	All times	115 dB (95% of total blasts)

AMI conducted a total of 65 blasts in March 2016. The characteristics of each blast are presented in **Table 9**. No exceedances were recorded in March 2016.

Table 9. Summary of blast monitoring results for March 2016.

Date	Time	Vibration (mm/s)	Overpressure (dB)	Comments
1/03/2016	18:30	Evening	<0.350	
2/03/2016	14:15	Day	<0.350	
2/03/2016	23:00	Night	<0.350	
3/03/2016	18:45	Evening	0.629	112.00
3/03/2016	18:45	Evening	0.629	112.00
4/03/2016	12:30	Day	<0.350	
4/03/2016	18:45	Evening	<0.350	
5/03/2016	12:30	Day	<0.350	
5/03/2016	18:45	Evening	<0.350	
6/03/2016	13:15	Day	0.586	91.48
6/03/2016	13:15	Day	0.586	91.48
6/03/2016	18:45	Evening	<0.350	
7/03/2016	14:30	Day	<0.350	
7/03/2016	18:35	Evening	<0.350	
8/03/2016	18:40	Evening	<0.350	
9/03/2016	14:00	Day	NR	
10/03/2016	18:50	Evening	NR	
10/03/2016	18:50	Evening	NR	
11/03/2016	14:30	Day	NR	
11/03/2016	14:30	Day	NR	
12/03/2016	14:50	Day	NR	
12/03/2016	19:00	Evening	NR	
13/03/2016	14:00	Day	NR	
13/03/2016	19:00	Evening	NR	

14/03/2016	13:45	Day	NR	
14/03/2016	18:00	Evening	NR	
15/03/2016	14:30	Day	NR	
15/03/2016	18:30	Evening	NR	
16/03/2016	18:30	Evening	NR	
16/03/2016	18:30	Evening	NR	
17/03/2016	18:50	Evening	NR	
17/03/2016	18:50	Evening	NR	
17/03/2016	18:50	Evening	NR	
18/03/2016	18:50	Evening	NR	
18/03/2016	18:50	Evening	NR	
18/03/2016	18:50	Evening	NR	
18/03/2016	18:50	Evening	NR	
19/03/2016	18:50	Evening	NR	
19/03/2016	18:50	Evening	NR	
20/03/2016	18:35	Evening	NR	
20/03/2016	18:35	Evening	NR	
21/03/2016	7:00	Day	NR	
22/03/2016	5:40	Night	NR	
22/03/2016	18:40	Evening	NR	
24/03/2016	6:30	Night	NR	
24/03/2016	6:30	Night	NR	
24/03/2016	13:15	Day	NR	
24/03/2016	18:45	Evening	NR	
25/03/2016	6:30	Night	NR	
25/03/2016	18:45	Evening	NR	
26/03/2016	19:00	Evening	NR	
26/03/2016	19:00	Evening	NR	
27/03/2016	6:30	Night	NR	
27/03/2016	6:30	Night	NR	
27/03/2016	18:30	Evening	NR	
28/03/2016	6:30	Night	NR	
28/03/2016	6:30	Night	NR	
28/03/2016	18:30	Evening	NR	
30/03/2016	6:30	Night	NR	
30/03/2016	13:30	Day	<0.350	
30/03/2016	13:30	Day	<0.350	
30/03/2016	13:30	Day	<0.350	
30/03/2016	13:30	Day	<0.350	
31/03/2016	6:30	Night	<0.350	
31/03/2016	18:45	Evening	<0.350	

Air Quality Monitoring

AMI has two High Volume Air Samplers (HVAS), each designed to sampled either Particulate matter < 10 µm (PM₁₀) or Total Suspended Particulate (TSP) matter. AMI has two Dust Deposition Gauges (DDG). Refer to **Figure 4** for location of the sampling points. A summary of the Project Approval conditions associated with these monitoring points is presented in **Table 10**.

Table 10. Summary of Project Approval conditions associated with dust monitoring.

Pollutant	Averaging Period	Limits
TSP	Annual	90 µg/m ³
PM ₁₀	Annual	30 µg/m ³
PM ₁₀	24 Hour	50 µg/m ³
Deposited Dust	Annual	2 g/m ² /month (Max. increase)
	Annual	4 g/m ² /month (Max. total)

Results for air quality monitoring conducted in March 2016 have been summarised in **Table 11**. The HVAS did not run on 6 March 2016. This was most likely caused by a power outage. The filter was not changed on 18 March 2016 due to staff absenteeism. Therefore the result from 12 March 2016 includes two sampling periods. No exceedances have been recorded this month.

Table 11. Summary of air quality monitoring results for March 2016.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	37.55
PM-10 (µg/m ³)	µg/m ³	30	Annual	17.86
	µg/m ³	50	6/03/2016	NR
	µg/m ³	50	12/03/2016	25.00
	µg/m ³	50	18/03/2016	
	µg/m ³	50	24/03/2016	25.00
	µg/m ³	50	30/03/2016	11.00
Deposited Dust (DDG1)	g/m ² /month	4	Annual	2.87
Deposited Dust (DDG2)	g/m ² /month	4	Annual	1.77

Gold Room Stack Monitoring

AMI has one licenced gold room stack monitoring (**Figure 1**). A summary of the licence conditions associated with this Licence Point is presented in **Table 12**.

Table 12. Summary of EPL 20179 conditions associated with gold room stack monitoring monitoring.

EPA ID No.	Monitoring Frequency
24	Yearly
	Pollutant
	Nitric Oxide (mg/m ³)

Gold Room stack monitoring is conducted on an annual basis. The last sample was taken in January 2016.

Complaints

No complaints were received in March 2016.