

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	October 2015
Date Published	17/11/2015

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**.

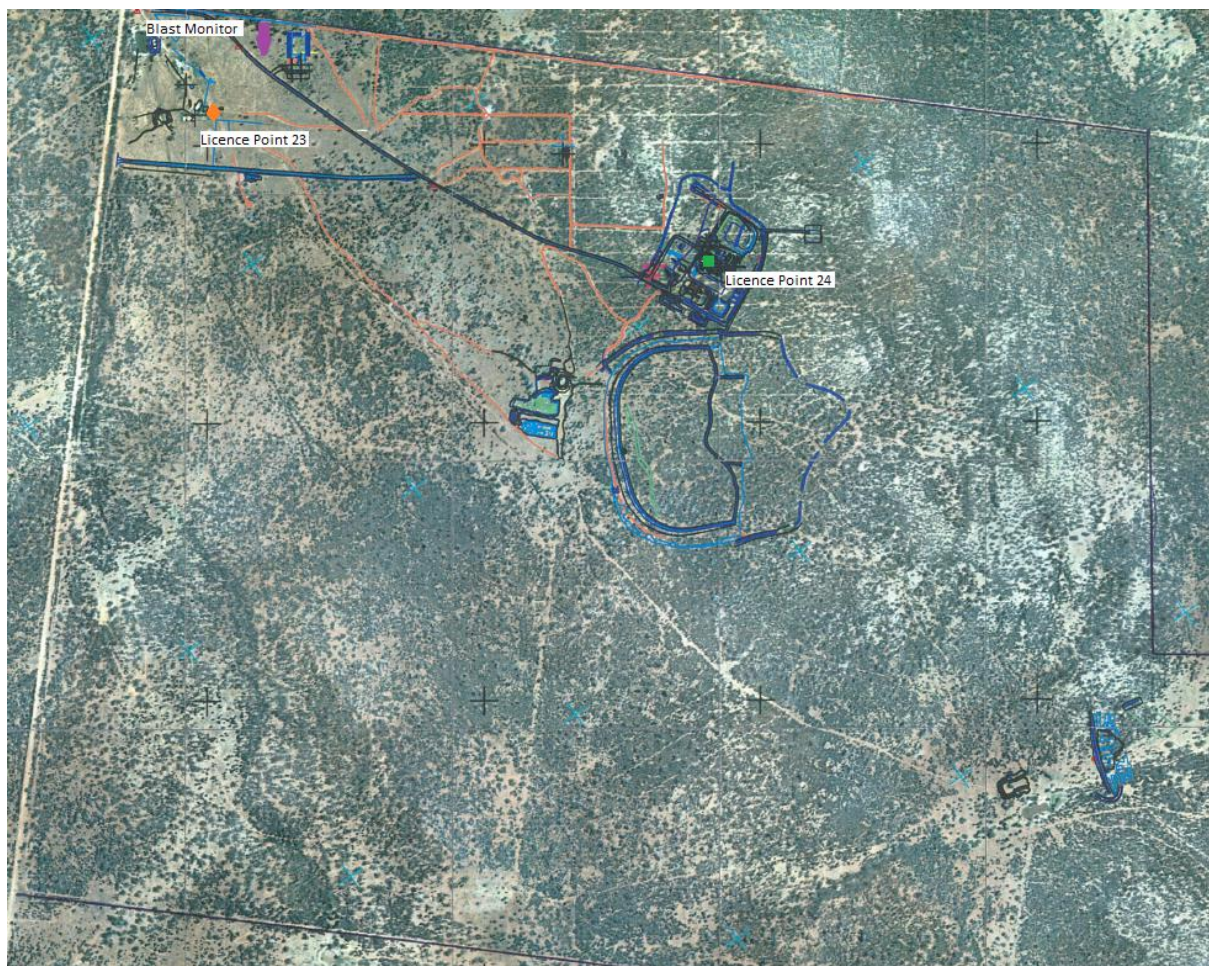


Figure 1. Location of the licence points associated with Gold Room Stack monitoring (Licence Point 24), Blast monitoring and meteorological monitoring (Licence Point 23).

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 October 2015.

Table 2. Summary of meteorological data for October 2015.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	5.21	21.87	22.16	34.90
Wind Direction (°)	Continuous	13.57	152.65	155.77	343.51
Wind Speed (m/s)	Continuous	0.00	2.01	1.87	9.95
Sigma Theta (°)	Continuous	2.76	22.89	18.11	98.79
Rainfall (mm)	Continuous	0.00	0.01	0.00	11.80
Relative Humidity (%)	Continuous	15.91	57.10	56.06	99.66

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**.

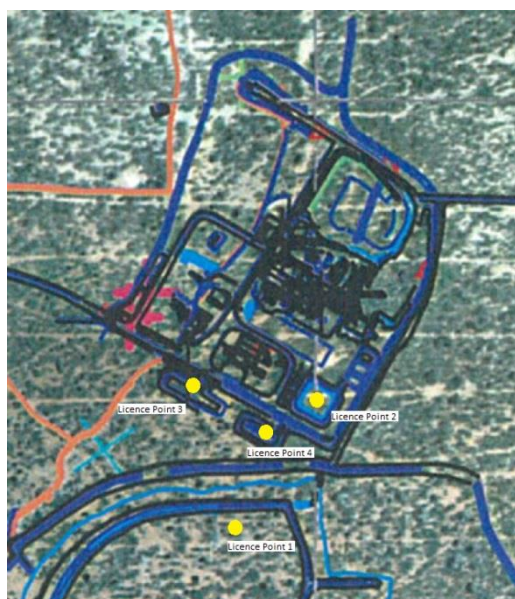


Figure 2. Licensed surface water monitoring points located onsite.

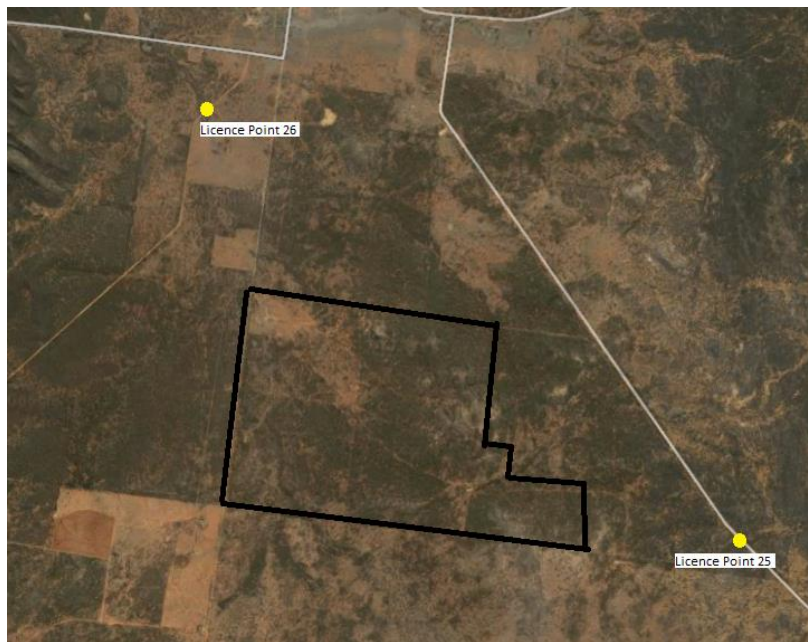


Figure 3. Licensed surface water monitoring points located offsite. The black outline represents the Mining Lease.

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 October 2015.

	WAD Cyanide				Al	As	B	Cd	Cu	EC (µS/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	0	0																	
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**.

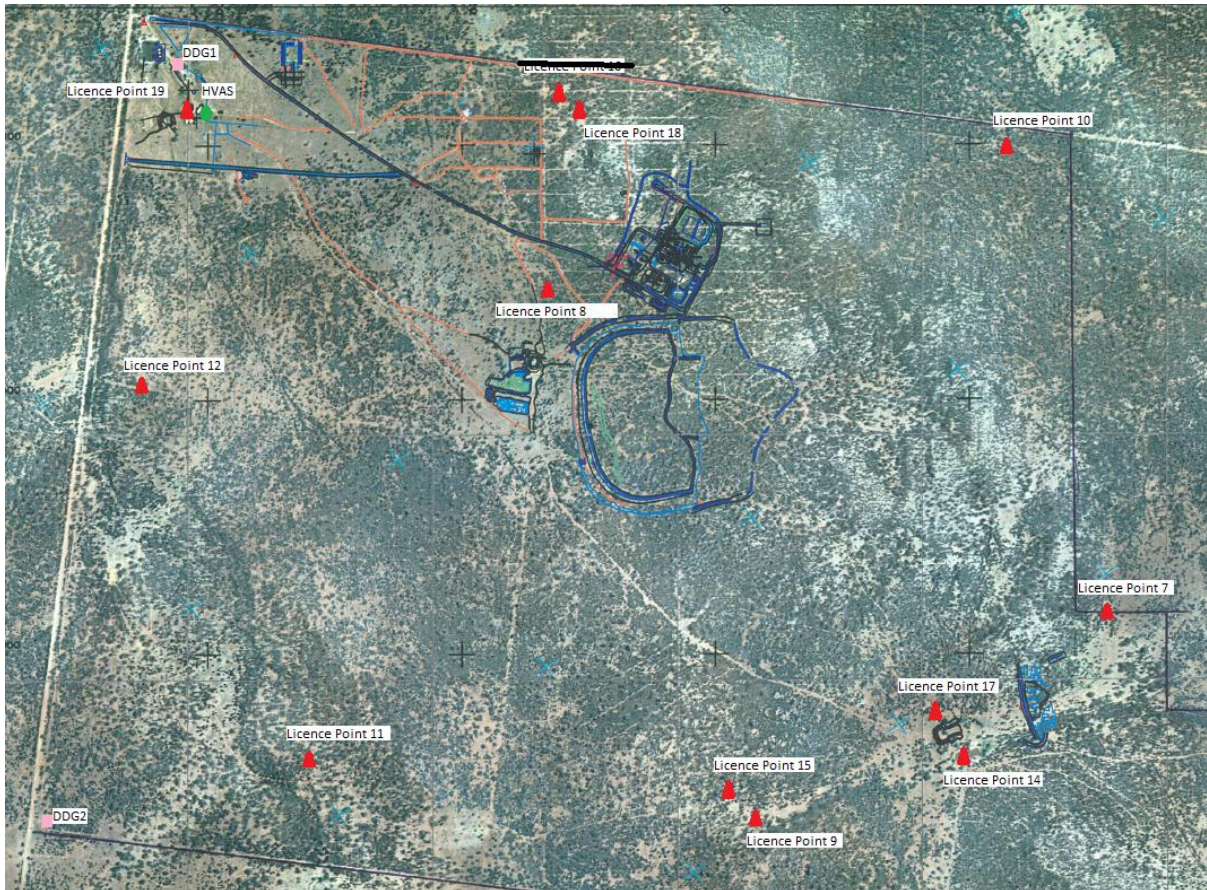


Figure 4. Licensed groundwater and air quality monitoring points.

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)

Quarterly groundwater results are summarised in **Table 6**.

Table 6. Summary of October 2015 groundwater quality results

Licence Point	Analyte (mg/L)													
	Sb	As	HCO3-	B	Cd	Ca	CO3-2	Cl	Cr	Cu	CN- (Free)	CN- (Total)	CN- (WAD)	EC (mS/cm)
7	0.006	<0.001	618	0.39	<0.0001	207	<1	1090	<0.001	<0.001	<0.004	<0.004	<0.004	4720
8	<0.001	0.004	394	0.38	<0.0001	172	<1	760	<0.001	<0.001	<0.004	<0.004	<0.004	4247
9	<0.001	<0.001	571	0.64	<0.0001	188	6	921	<0.001	0.001	<0.004	<0.004	<0.004	5039
10	<0.001	<0.001	545	0.43	<0.0001	187	<1	1150	<0.001	<0.001	<0.004	<0.004	<0.004	5191
11	<0.001	0.001	317	0.93	0.0001	102	26	1280	<0.001	0.008	<0.004	<0.004	<0.004	5590
12														
14	0.007	0.001	503	0.39	0.0002	108	6	618	<0.001	0.003	<0.004	<0.004	<0.004	3187
15	<0.001	0.002	658	0.66	<0.0001	171	25	903	<0.001	0.001	<0.004	<0.004	<0.004	5479
17	<0.001	<0.001	506	0.38	0.0003	168	<1	959	0.002	0.002	<0.004	<0.004	<0.004	4412
18	<0.001	0.002	335	0.4	<0.0001	221	<1	1030	<0.001	0.002	<0.004	<0.004	<0.004	5490
19	<0.001	0.002	407	1	<0.0001	70	<1	1020	<0.001	0.004	<0.004	<0.004	<0.004	4964
Licence Point	Analyte (mg/L)													
	Fe	Pb	Mg	Hg	Mo	Ni	pH	K	Ag	Na	Sn	TDS	Zn	SWL (m)
7	<0.05	<0.001	177	<0.0001	0.002	0.003	6.93	20	<0.001	652	<0.001	3300	0.024	52.76
8	2.16	0.001	184	<0.0001	<0.001	0.011	6.59	23	<0.001	488	<0.001	2930	0.023	87.53
9	1.12	0.002	219	<0.0001	<0.001	<0.001	7.42	28	<0.001	671	<0.001	3470	0.006	
10	8.28	0.001	178	<0.0001	<0.001	0.008	7.09	16	<0.001	602	<0.001	3240	0.274	53.67
11	0.1	<0.001	132	<0.0001	<0.001	0.002	7.56	32	<0.001	1030	<0.001	3620	0.093	
12														59.46
14	<0.05	<0.001	106	<0.0001	0.002	0.004	6.94	22	<0.001	406	<0.001	1800	0.084	74.59
15	1.7	0.001	211	<0.0001	<0.001	0.002	7.07	32	<0.001	750	<0.001	3390	0.016	76.99
17	0.08	<0.001	164	<0.0001	<0.001	0.046	6.68	16	<0.001	526	<0.001	2640	0.034	75.155
18	8.51	0.001	239	<0.0001	<0.001	0.01	6.6	27	<0.001	644	<0.001	3920	0.027	95.07
19	0.15	<0.001	106	<0.0001	<0.001	0.001	7.02	33	<0.001	794	<0.001	2890	0.026	

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 7**.

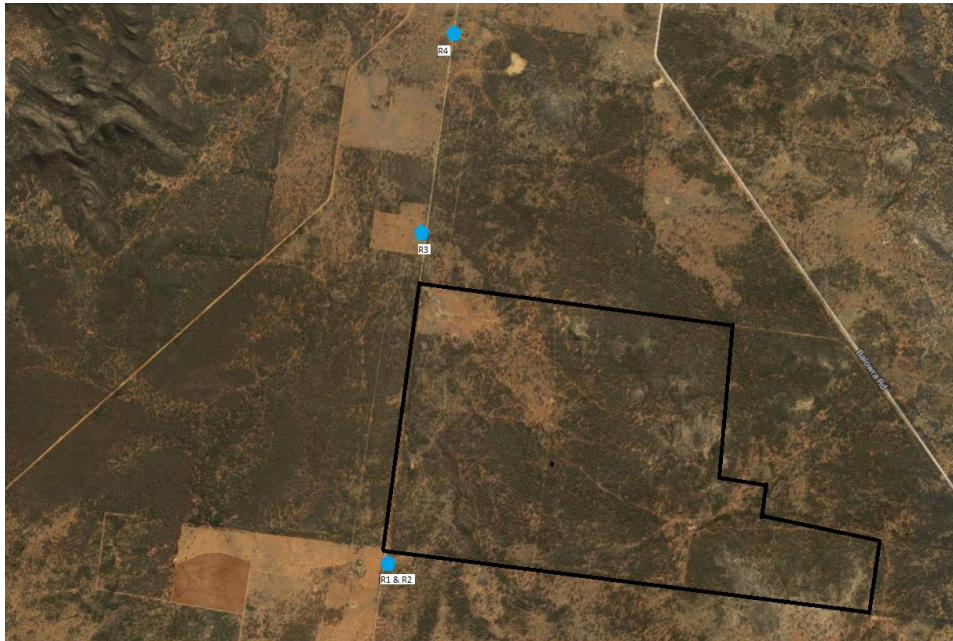


Figure 5. Licenced noise monitoring locations. The black outline represents the Mining Lease.

Table 7. 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

No noise monitoring was conducted in October 2015 as the monitor was away for annual calibration.

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	All times	10 mm/s (max.)
	<i>(monitor for every blast)</i>	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 24 blasts in October 2015. The characteristics of each blast are presented in **Table 9**. No results were recorded for October 2015 as the geophone was found to be faulty. A replacement geophone has been sourced and the faulty geophone sent for repair. AMI will take all reasonable steps to reduce down time of blast monitoring.

Table 9. Summary of blast monitoring results for October 2015.

Date	Time	Vibration (mm/s)	Overpressure (dB)	Comments
1/10/2015	1:45	Evening	NR	
2/10/2015	6:30	Day	NR	
3/10/2015	16:45	Day	NR	
3/10/2015	19:00	Evening	NR	
4/10/2015	17:00	Day	NR	
5/10/2015	16:45	Day	NR	
6/10/2015	20:55	Day	NR	
7/10/2015	18:30	Evening	NR	
8/10/2015	18:45	Day	NR	
8/10/2015	18:45	Evening	NR	
9/10/2015	18:35	Day	NR	
9/10/2015	18:35	Evening	NR	
12/10/2015	14:00	Day	NR	
15/10/2015	12:30	Day	NR	
16/10/2015	18:30	Evening	NR	
18/10/2015	13:15	Day	NR	
19/10/2015	19:00	Evening	NR	
19/10/2015	19:00	Evening	NR	
22/10/2015	18:45	Evening	NR	
24/10/2015	13:45	Day	NR	
25/10/2015	18:40	Evening	NR	
26/10/2015	19:00	Evening	NR	
26/10/2015	14:45	Day	NR	
30/10/2015	18:30	Evening	NR	

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 October 2015 have been summarised in **Table 11**. No exceedances have been recorded this month.

Table 11. Summary of air quality monitoring results for October 2015.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	32.64
PM-10 (µg/m ³)	µg/m ³	30	Annual	13.64
	µg/m ³	50	2/10/2015	50.00
	µg/m ³	50	8/10/2015	43.00
	µg/m ³	50	14/10/2015	22.00
	µg/m ³	50	20/10/2015	19.00
	µg/m ³	50	26/10/2015	30.00
Deposited Dust (DDG1)	g/m ² /month	4	Annual	3.70
Deposited Dust (DDG2)	g/m ² /month	4	Annual	2.14

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 November 2014.

Complaints

One complaint was received in October 2015 (**Table 13**). The complaint was relating to alleged unauthorised access of a neighbouring property, noise exceedances and blast exceedances. The complainant was assured that no authorised access of their property had occurred and that no noise or blast exceedances have been recorded.

Table 13. Summary of complaints received for October 2015.

Date	Pollution complaint category
24/10/2015	Unauthorised access, noise, blast vibration