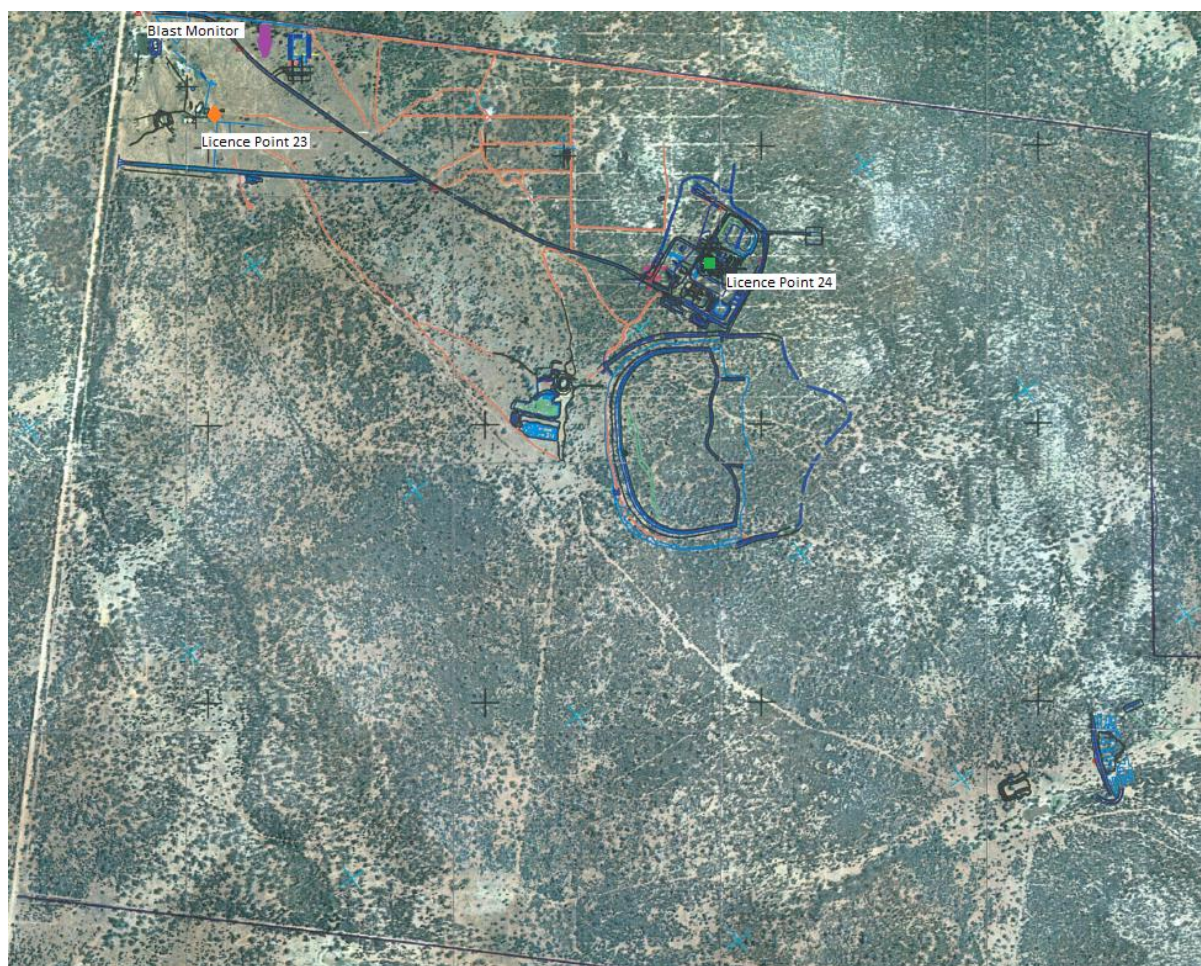


<b>Licensee</b>	Aurelia Metals Limited
<b>Address</b>	'The Peak, Burthong Road, Nymagee, NSW 2831
<b>Environmental Protection Licence</b>	20179
<b>Link to Licence</b>	<a href="http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32372&amp;SYSUID=1&amp;LICID=20179">http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32372&amp;SYSUID=1&amp;LICID=20179</a>
<b>Project Approval</b>	10_0191
<b>Reporting Period</b>	July 2015
<b>Date Published</b>	20/08/2015

## 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

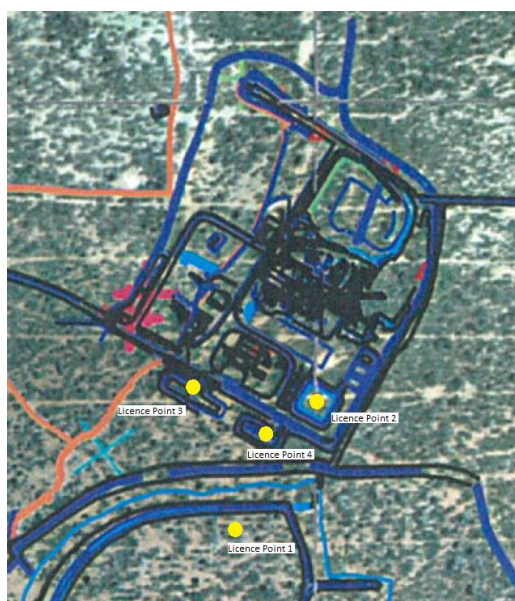
Meteorological monitoring is conducted on a continuous basis. **Table 2** is a summary of the data collected by the weather station in July 2015.

**Table 2.** Summary of meteorological data for July 2015.

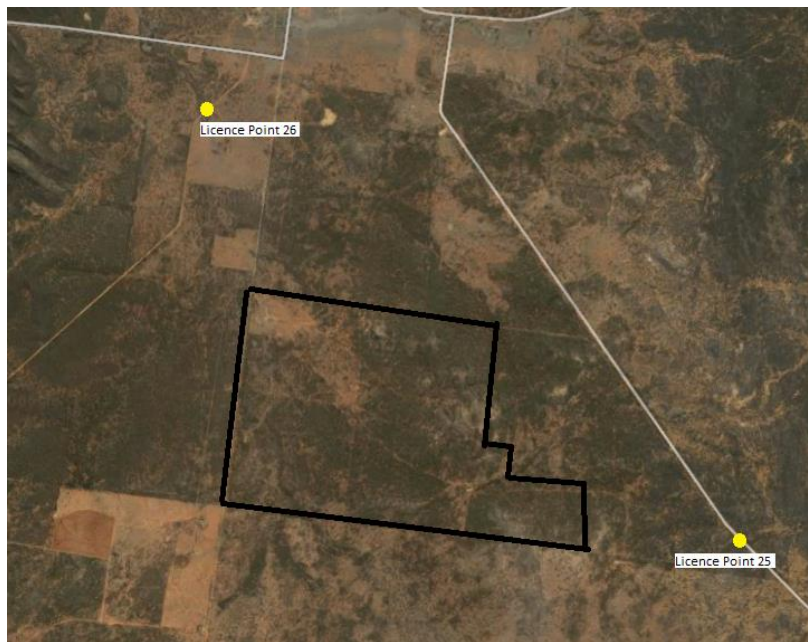
Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	-5.65	6.93	7.51	16.72
Wind Direction (°)	Continuous	14.87	184.66	201.68	348.32
Wind Speed (m/s)	Continuous	0.00	1.53	1.24	7.16
Sigma Theta (°)	Continuous	1.10	20.40	16.22	103.09
Rainfall (mm)	Continuous	0.00	0.02	0.00	2.00
Relative Humidity (%)	Continuous	43.28	85.99	92.03	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 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	

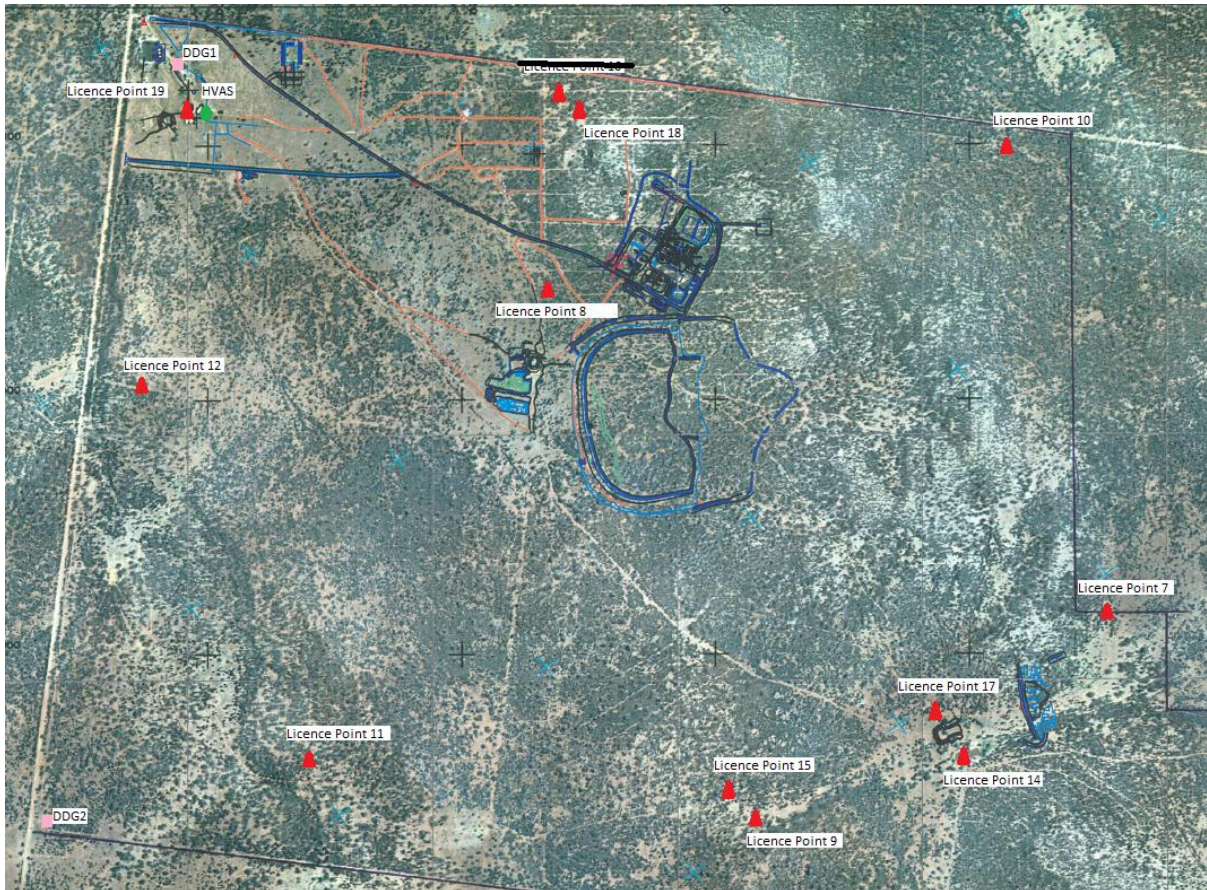
**Table 4** is a summary of the surface water quality results. The table has also been colour coordinated by the licence limit that applies to each licence point. Licence Point 3, 4 and 26 did not discharge for the month.

**Table 4.** Summary of surface water quality results for July 2015.

	WAD Cyanide				Analytes (mg/L)															
	Min.	Mean	Median	Max.	Al	As	B	Cd	Cu	EC (µS/cm)	Pb	Mn	Ni	N	Oil & Grease	pH	Ag	P	TSS	Zn
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	2.67	0	10																
2	0	2.9	0	20																
3	No discharge																			
4	No discharge																			
25	<0.004				30.7	0.005	<0.05	<0.0001	0.026	32.5	0.026	0.433	0.026	2.4	6	7.92	<0.001	0.67	949	0.06
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)

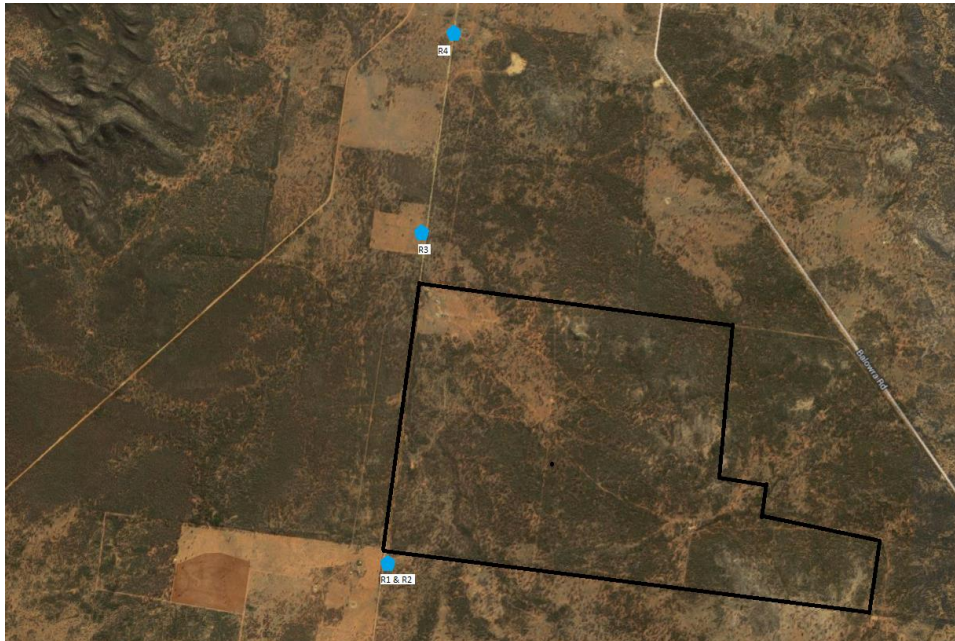
Quarterly groundwater results are summarised in **Table 6**.

**Table 6.** Summary of July 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	0.015	<0.001	700	0.44	<0.0001	224	<1	840	<0.001	0.002	<0.004	0.005	<0.004	4241
8	<0.001	0.008	478	0.46	<0.0001	204	<1	732	<0.001	0.001	<0.004	<0.004	<0.004	4045
9	<0.001	<0.001	684	0.77	<0.0001	217	<1	886	<0.001	<0.001	<0.004	<0.004	<0.004	4731
10	<0.001	<0.001	577	0.51	<0.0001	196	<1	1010	0.002	0.007	<0.004	<0.004	<0.004	4367
11	<0.001	0.001	394	1.1	<0.0001	114	<1	1100	<0.001	0.002	<0.004	<0.004	<0.004	5302
12														
14	0.006	0.003	589	0.44	<0.0001	124	<1	533	<0.001	0.003	<0.004	<0.004	<0.004	2855
15	<0.001	0.002	783	0.78	<0.0001	204	<1	748	<0.001	0.002	<0.004	<0.004	<0.004	4120
17	<0.001	<0.001	574	0.49	<0.0001	213	<1	1130	<0.001	0.037	<0.004	<0.004	<0.004	4867
18	0.001	0.004	380	0.46	0.0006	226	<1	801	<0.001	0.018	<0.004	<0.004	<0.004	4977
19	<0.001	0.002	470	1.06	<0.0001	82	<1	818	<0.001	0.008	<0.004	<0.004	<0.004	4367
Licence Point	Analyte (mg/L)													
	Fe	Pb	Mg	Hg	Mo	Ni	pH	K	Ag	Na	Sn	TDS	Zn	SWL (m)
7	0.12	0.006	179	<0.0001	0.003	0.009	7.17	26	<0.001	593	<0.001	2690	0.05	53.39
8	8.59	0.009	201	<0.0001	<0.001	0.056	6.7	27	<0.001	530	<0.001	2800	0.313	86.48
9	1.33	<0.001	233	<0.0001	<0.001	<0.001	7.54	27	<0.001	730	<0.001	3380	0.012	
10	0.26	<0.001	176	<0.0001	<0.001	<0.001	7.29	16	<0.001	649	<0.001	3250	0.016	54
11	<0.05	<0.001	141	<0.0001	<0.001	<0.001	7.77	33	<0.001	1030	<0.001	3230	0.021	
12														59.49
14	<0.05	0.005	112	<0.0001	0.001	0.007	7.16	24	<0.001	424	<0.001	1790	0.161	74.59
15	1.68	0.006	220	<0.0001	<0.001	0.005	7.3	34	<0.001	742	<0.001	3320	0.036	76.05
17	<0.001	<0.001	204	<0.0001	0.001	0.103	7.02	15	<0.001	703	<0.001	3200	0.031	76.405
18	7.92	0.051	230	<0.0001	<0.001	0.024	6.73	90	<0.001	733	<0.001	3520	0.21	94.98
19	<0.05	<0.001	116	<0.0001	<0.001	0.004	7.17	33	<0.001	814	<0.001	2500	0.046	

## Noise Monitoring

AMI has four licenced locations (R1, R2, R3 and R4) monitoring points 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 very close 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
	Aluminium	LA1 (1 minute) 45 dB

**Table 8** is a summary of the noise results for the month. All results are within licence conditions.

**Table 8.** Summary of noise monitoring results for July 2015.

Date	Time	Site	Period of day	Wind speed (m/s)	LA1 (dB)	LAeq (dB)	Mine Audible?	Noise heard
26/07/2015	6:57	R1/R2	Night	1.45	45.8	24.88	Yes	Birds, vent fan
26/07/2015	6:31	R3	Night	1.36	37.2	24.21	No	Car in background, wind, birds
26/07/2015	6:05	R4	Night	1.44	32	15.52	No	Car in distance, birds
28/07/2015	17:08	R1/R2	Day	1.41	n/a	18.74	No	Wind, birds, car at Harland property
28/07/2015	16:45	R3	Day	2.12	n/a	28.89	Yes	wind, birds, vent fan, reverse beeper
28/07/2015	16:22	R4	Day	2.74	n/a	27.19	Yes	wind, birds, mine truck, reverse beeper, vent fan
27/07/2015	21:00	R1/R2	Evening	0.53	n/a	21.20	Yes	vent fan (barely audible), car in distance (Four Corners Farm Stay), dogs barking
27/07/2015	20:33	R3	Evening	0.92	n/a	33.16	Yes	vent fan, crusher, truck
27/07/2015	18:30	R4	Evening	0.39	n/a	27.10	Yes	Mine truck (5 minutes), 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 9**.

**Table 9.** 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 (95% of total blasts)
Blast monitoring	Airblast overpressure <i>(monitor for every blast)</i>	All times	120 dB (max.)
		All times	115 dB (95% of total blasts)

AMI conducted a total of 25 blasts in July 2015. The characteristics of each blast are presented in **Table 10**.

**Table 10.** Summary of blast monitoring results for July 2015.

Date	Time	Vibration (mm/s)	Overpressure (dB)	Comments
1/07/2015	18:35	Evening	<0.350	
2/07/2015	18:40	Evening	<0.350	
3/07/2015	11:30	Evening	1.537	<88
3/07/2015	18:30	Day	<0.350	
4/07/2015	11:35	Evening	<0.350	
4/07/2015	18:55	Day	<0.350	
4/07/2015	18:55	Evening	<0.350	
5/07/2015	18:55	Evening	<0.350	
6/07/2015	11:30	Day	<0.350	
6/07/2015	18:25	Evening	<0.350	
7/07/2015	18:35	Evening	<0.350	
8/07/2015	19:20	Evening	<0.350	
8/07/2015	6:50	Night	<0.350	
9/07/2015	18:50	Evening	<0.350	
12/07/2015	18:41	Evening	3.814	104.20
15/07/2015	13:20	Day	0.914	91.48
16/07/2015	13:50	Day	1.571	93.98
16/07/2015	13:50	Day	1.571	93.98
18/07/2015	0.5347222	Day	3.117	97.50
20/07/2015	19:00	Evening	<0.350	
22/07/2015	0.7826389	Evening	4.985	95.92
24/07/2015	6:45	Night	<0.350	
25/07/2015	18:45	Evening	<0.350	
25/07/2015	0.7777778	Evening	1.331	91.48
27/07/2015	14:10	Day	1.542	101.90

## Air Quality Monitoring

AMI has two High Volume Air Samplers (HVAS), each designed to sampled either Particulate matter < 10 µm (PM<sub>10</sub>) 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 11**.

**Table 11.** Summary of Project Approval conditions associated with dust monitoring.

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

Results for air quality monitoring conducted in July 2015 have been summarised in **Table 12**. No exceedances have been recorded this month.

**Table 12.** Summary of air quality monitoring results for July 2015.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	$\mu\text{g}/\text{m}^3$	90	Annual	12.54
PM-10 ( $\mu\text{g}/\text{m}^3$ )	$\mu\text{g}/\text{m}^3$	30	Annual	5.38
	$\mu\text{g}/\text{m}^3$	50	4/07/2015	6.00
	$\mu\text{g}/\text{m}^3$	50	10/07/2015	4.00
	$\mu\text{g}/\text{m}^3$	50	16/07/2015	2.00
	$\mu\text{g}/\text{m}^3$	50	22/07/2015	3.00
	$\mu\text{g}/\text{m}^3$	50	28/07/2015	5.00
Deposited Dust (DDG1)	$\text{g}/\text{m}^2/\text{month}$	4	Annual	2.40
Deposited Dust (DDG2)	$\text{g}/\text{m}^2/\text{month}$	4	Annual	1.90

### 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 13**.

**Table 13.** Summary of EPL 20179 conditions associated with gold room stack monitoring monitoring.

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

Gold Room stack monitoring is conducted on an annual basis. The last sample was taken in November 2014.

## Complaints

One complaint was received in July 2015. The complaint was relating to noise originating from the Hera Mine (**Table 14**). No exceedances relating to noise have been recorded in the surrounding area. The complaint is currently under investigation.

**Table 14.** Summary of complaints for July 2015.

Date	Pollution complaint category
27/07/2015	Noise