

Licensee	Hera Resources Pty Ltd
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	December 2016
Date Published	6 February 2017

Weather Monitoring

Hera Resources Pty Ltd (the Company), a wholly owned subsidiary of Aurelia Metals Limited, owns and operates the Hera Mine. The Company has one licenced weather station (licence point 23) associated with the mine (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 and Licence Point 39), 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 December 2016. Figure 2 is a wind rose for the month.

Table 2. Summary of meteorological data for December 2016.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	4.61	24.84	25.42	38.45
Wind Speed (m/s)	Continuous	0.00	2.35	2.08	12.72
Sigma Theta (°)	Continuous	3.24	23.42	19.29	100.90
Rainfall (mm)	Continuous	0.00	0.03	0.00	12.80
Relative Humidity (%)	Continuous	16.35	55.78	50.48	99.11

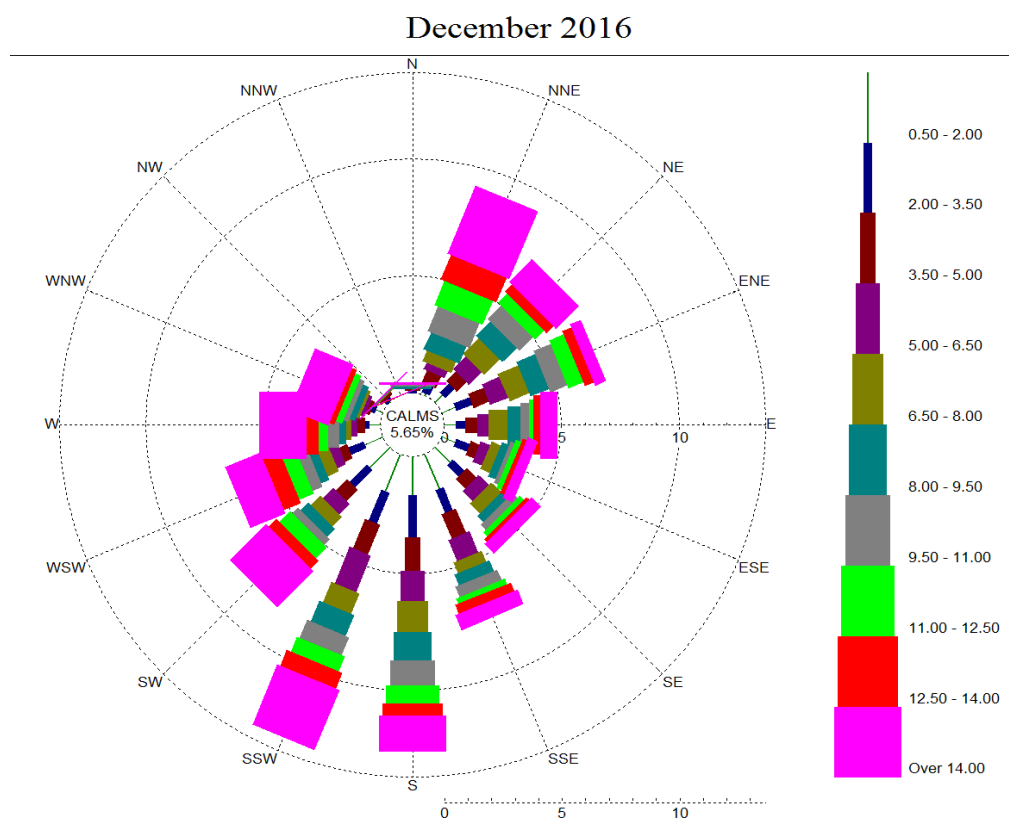


Figure 2. Wind rose December 2016.

Surface Water Monitoring

The Company has six licence points associated with surface waters. Four of these points are located within the Mining Lease (Figure 3) and two are located on Box creek, upstream and downstream of the mining lease (Figure 4). A summary of the licence conditions associated with these licence points is presented in Table 3.



Figure 3. Licensed surface water monitoring points located onsite.

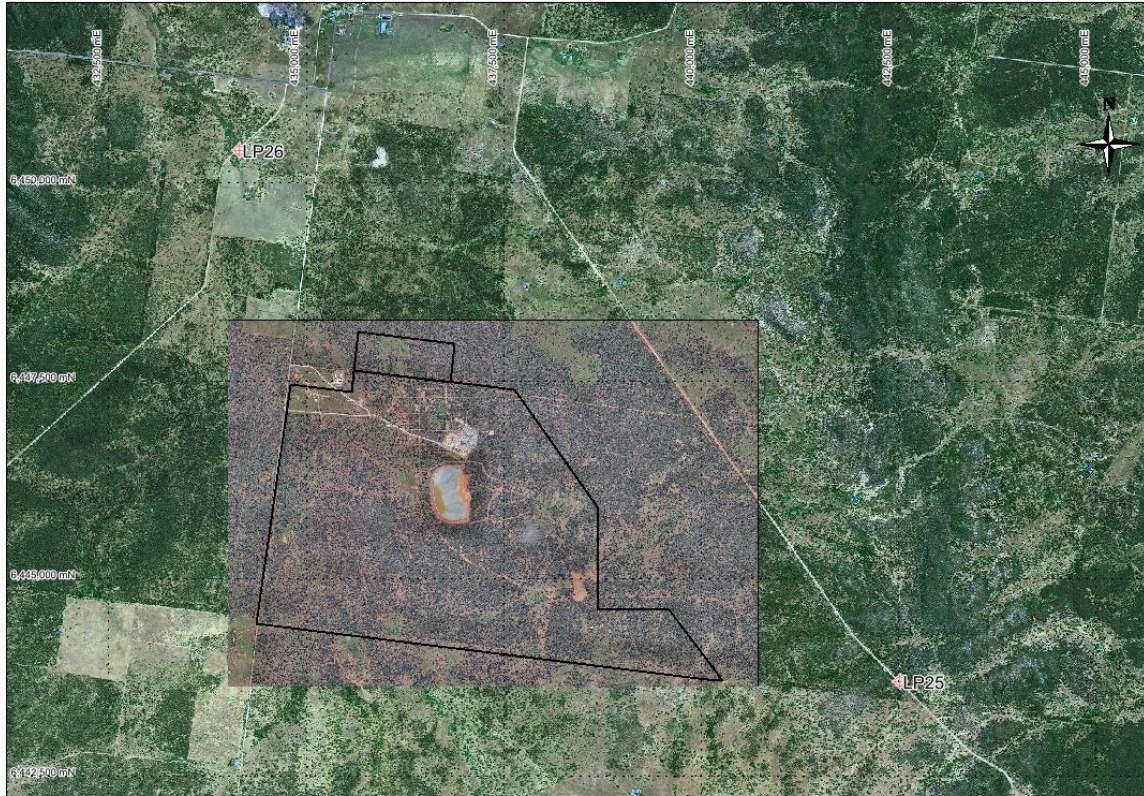


Figure 4. Licensed surface water monitoring points located offsite. The black outline represents the Project Area.

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 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 4, 25 and 26 did not discharge for the month. Licence Point 3 discharged on 16 December 2016 following 90mm of rain. The incident was reported to the Environmental Protection Authority and Department of Planning and Environment on 11 January 2017 after the Company became aware of the incident (following retrieval of results from the laboratory).

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

	Analytes (mg/L)																			
	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	<0.004				1.18	0.001	<0.05	0.0181	0.008	578	0.279	0.517	0.024	5.6	<5	6.91	<0.001	<0.01	38	3.62
4	No flow																			
25	No flow																			
26	No flow																			

Groundwater Monitoring

The Company has 17 licence points associated with groundwater. These points are located around the Project Area (Figure 5) and are a combination of observation bores, productions bores (red points) and piezometers (purple points). A summary of the licence conditions associated with these licence points is presented in Table 5.

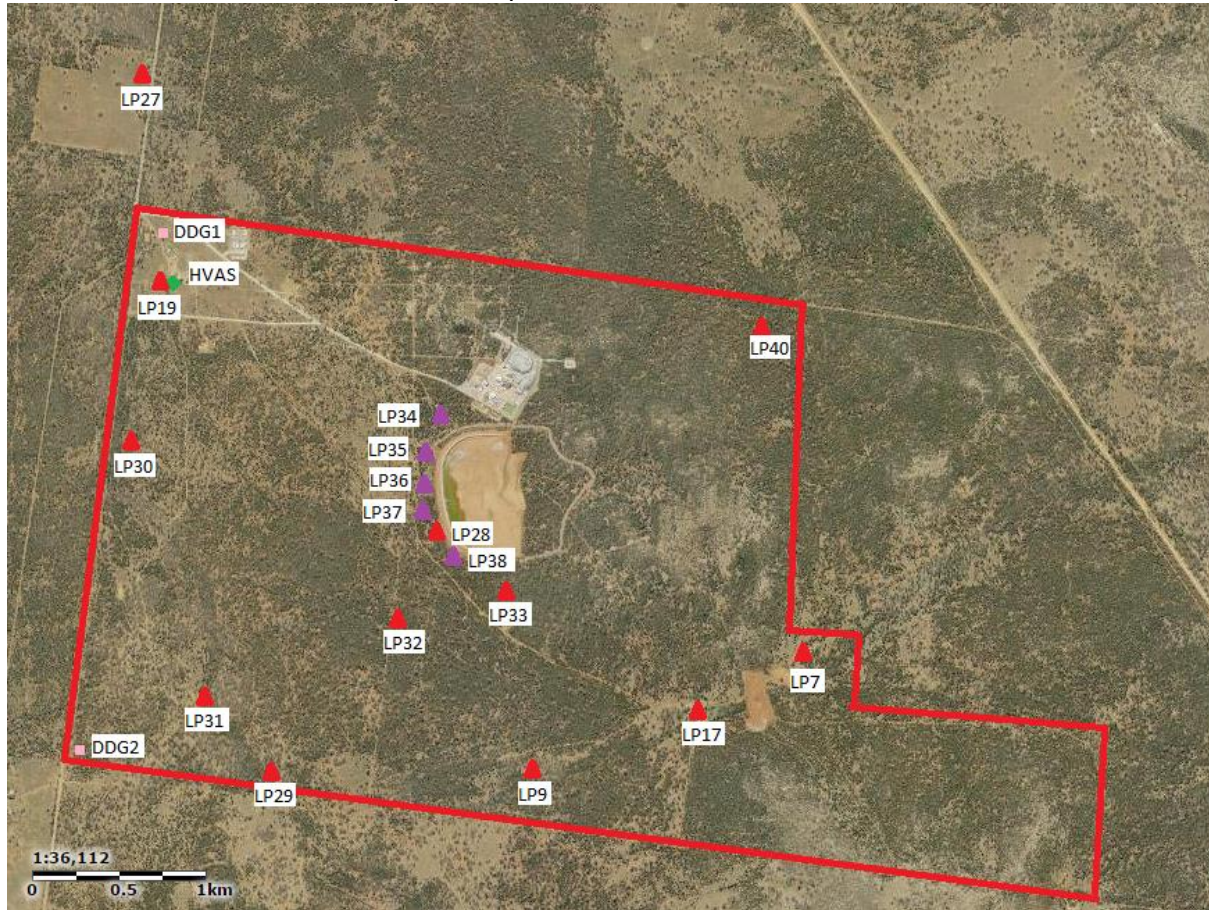


Figure 5. Licensed groundwater and air quality monitoring points.

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

EPA ID No.	Monitoring Frequency
	Quarterly
	Pollutant
7, 9, 17, 19, 27, 28, 29, 30, 31, 32, 33, 40	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 (μ S/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)
	Tin (mg/L)
	Total dissolved solids (mg/L)
	Zinc (mg/L)
7, 27, 28, 29, 30, 34, 35, 36, 37, 38, 40	Standing Water Level (m)
EPA ID No.	Monitoring Frequency
	When water present
	Pollutant
34, 35, 36, 37, 38	Cyanide (free) (mg/L)
	Cyanide (total) (mg/L)
	Cyanide (WAD) (mg/L)
	Electrical Conductivity (μ S/cm)
	pH

Quarterly groundwater results were last reported in October 2016.

Noise Monitoring

The Company has four licenced monitoring points (R1, R2, R3 and R4) located along the Burthong Road (Figure 6). The locations are strategically placed near the Hera Mine’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.

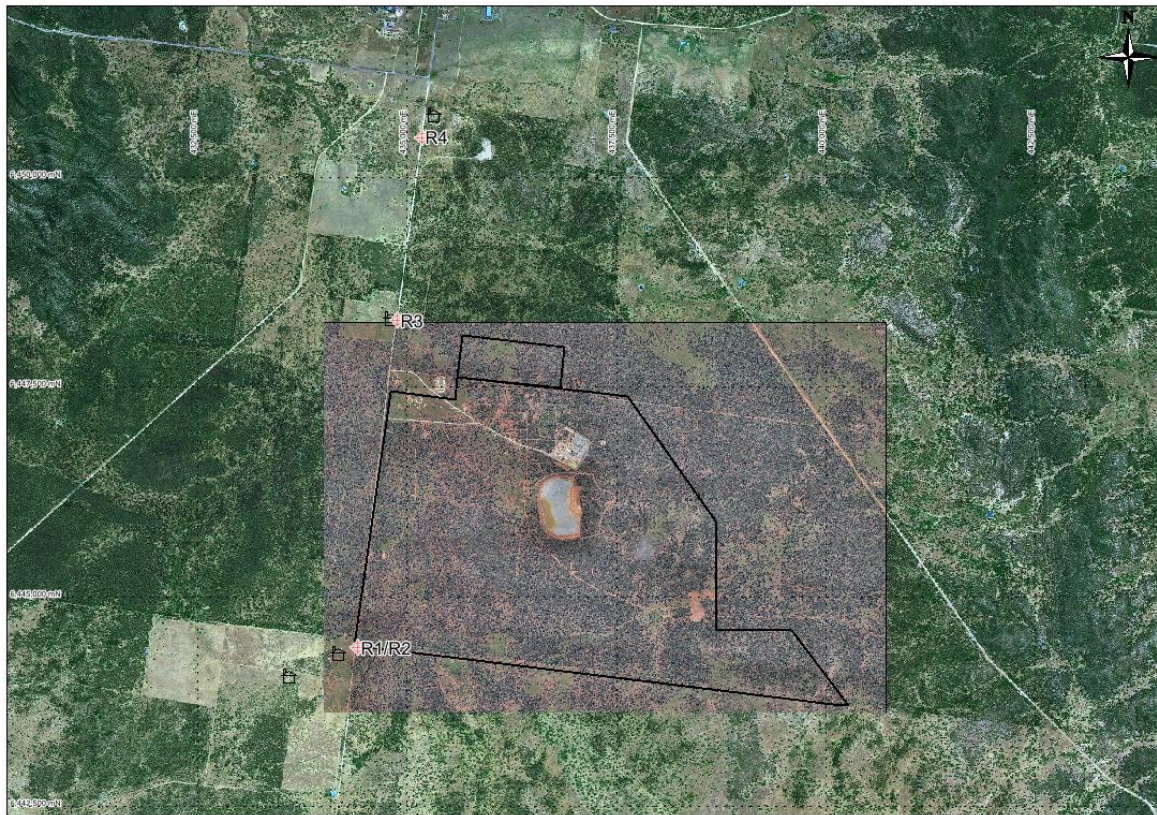


Figure 6. Licensed noise monitoring locations. The black outline represents the approximate project area.

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

An independent consultant will be engaged to conduct a noise assessment in the first quarter of 2017.

Blast Monitoring

The blast monitor is located adjacent to the house on the nearest neighbour’s property (Figure 1). A summary of the EPL and PA conditions associated with this licenced point are presented in Table 7.

Table 7. 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)

The Company conducted a total of 73 blasts in December 2016. The characteristics of each blast are presented in Table 8. No exceedances were recorded for the month.

Table 8. Summary of blast monitoring results for December 2016.

Date	Time	Time period	Vibration (mm/s)	Overpressure (dB)
Thursday, 1 December 2016	6:45	Night	<0.35	
Thursday, 1 December 2016	6:45	Night	<0.35	
Thursday, 1 December 2016	18:30	Evening	<0.35	
Friday, 2 December 2016	6:50	Night	<0.35	
Friday, 2 December 2016	6:50	Night	<0.35	
Saturday, 3 December 2016	6:25	Night	<0.35	
Saturday, 3 December 2016	6:50	Night	<0.35	
Saturday, 3 December 2016	6:50	Night	<0.35	
Sunday, 4 December 2016	6:55	Sunday	<0.35	
Sunday, 4 December 2016	8:00	Sunday	<0.35	
Sunday, 4 December 2016	13:30	Sunday	<0.35	
Monday, 5 December 2016	11:00	Day	<0.35	
Tuesday, 6 December 2016	7:15	Day	<0.35	
Tuesday, 6 December 2016	7:15	Day	<0.35	
Wednesday, 7 December 2016	6:30	Night	<0.35	
Wednesday, 7 December 2016	6:30	Night	<0.35	
Thursday, 8 December 2016	7:00	Day	<0.35	
Thursday, 8 December 2016	7:00	Day	<0.35	
Friday, 9 December 2016	6:30	Night	<0.35	
Friday, 9 December 2016	6:30	Night	<0.35	
Saturday, 10 December 2016	6:30	Night	<0.35	
Saturday, 10 December 2016	6:30	Night	<0.35	
Sunday, 11 December 2016	7:00	Sunday	<0.35	
Sunday, 11 December 2016	7:00	Sunday	<0.35	
Monday, 12 December 2016	6:30	Night	<0.35	
Monday, 12 December 2016	6:30	Night	<0.35	
Tuesday, 13 December 2016	6:45	Night	<0.35	

Tuesday, 13 December 2016	6:45	Night	<0.35	
Tuesday, 13 December 2016	13:00	Day	<0.35	
Wednesday, 14 December 2016	18:45	Evening	<0.35	
Wednesday, 14 December 2016	18:45	Evening	<0.35	
Thursday, 15 December 2016	6:45	Night	<0.35	
Thursday, 15 December 2016	6:45	Night	<0.35	
Thursday, 15 December 2016	7:30	Day	<0.35	
Thursday, 15 December 2016	7:30	Day	<0.35	
Friday, 16 December 2016	7:30	Night	<0.35	
Friday, 16 December 2016	7:30	Night	<0.35	
Saturday, 17 December 2016	6:30	Night	<0.35	
Saturday, 17 December 2016	6:30	Night	<0.35	
Sunday, 18 December 2016	6:30	Night	<0.35	
Sunday, 18 December 2016	6:30	Night	<0.35	
Monday, 19 December 2016	6:40	Sunday	<0.35	
Monday, 19 December 2016	6:40	Sunday	<0.35	
Monday, 19 December 2016	14:25	Day	<0.35	
Tuesday, 20 December 2016	6:50	Night	<0.35	
Tuesday, 20 December 2016	6:50	Night	<0.35	
Tuesday, 20 December 2016	18:30	Evening	<0.35	
Wednesday, 21 December 2016	6:25	Night	<0.35	
Wednesday, 21 December 2016	6:25	Night	<0.35	
Wednesday, 21 December 2016	13:05	Day	<0.35	
Thursday, 22 December 2016	7:40	Day	<0.35	
Thursday, 22 December 2016	7:40	Day	<0.35	
Thursday, 22 December 2016	18:35	Evening	<0.35	
Friday, 23 December 2016	7:00	Day	<0.35	
Friday, 23 December 2016	7:00	Day	<0.35	
Saturday, 24 December 2016	6:30	Night	<0.35	
Saturday, 24 December 2016	6:30	Night	<0.35	
Sunday, 25 December 2016	7:00	Day	<0.35	
Sunday, 25 December 2016	7:00	Day	<0.35	
Tuesday, 27 December 2016	6:30	Night	<0.35	
Sunday, 25 December 2016	6:30	Sunday	<0.35	
Sunday, 25 December 2016	6:30	Sunday	<0.35	
Monday, 26 December 2016	7:00	Day	<0.35	
Monday, 26 December 2016	7:00	Day	<0.35	
Tuesday, 27 December 2016	6:30	Night	<0.35	
Wednesday, 28 December 2016	6:30	Night	<0.35	
Wednesday, 28 December 2016	6:30	Night	<0.35	
Thursday, 29 December 2016	6:30	Night	<0.35	
Thursday, 29 December 2016	6:30	Night	<0.35	
Friday, 30 December 2016	6:30	Night	<0.35	
Friday, 30 December 2016	18:30	Evening	0.377	<88
Saturday, 31 December 2016	6:58	Night	0.377	<88
Saturday, 31 December 2016	6:58	Night	<0.35	

Air Quality Monitoring

The Company has two High Volume Air Samplers (HVAS), either designed to sample Particulate matter less than 10 µm (PM₁₀) or Total Suspended Particulate (TSP) matter and two Dust Deposition Gauges (DDG). Refer to Figure 5 for location of the sampling points. A summary of the PA conditions associated with these monitoring points is presented in Table 9.

Table 9. 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 December 2016 have been summarised in Table 10. No exceedances have been recorded this month.

Table 10. Summary of air quality monitoring results for December 2016.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	27.28
PM-10 (µg/m ³)	µg/m ³	30	Annual	13.58
	µg/m ³	50	1/12/2016	23.00
	µg/m ³	50	7/12/2016	13.00
	µg/m ³	50	13/12/2016	30.00
	µg/m ³	50	19/12/2016	17.00
	µg/m ³	50	25/12/2016	19.00
	µg/m ³	50	31/12/2016	13.00
Deposited Dust (DDG1)	g/m ² /month	4	Annual	2.16

Gold Room Stack Monitoring

The Company has two licenced gold room stack monitoring (Figure 1). A summary of the licence conditions associated with this Licence Point is presented in Table 11.

Table 11. Summary of EPL 20179 conditions associated with gold room stack monitoring monitoring.

EPA ID No.	Monitoring Frequency
24	Yearly
39	
Pollutant	
Nitric Oxide (mg/m ³)	

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

Concentrate Transport

The Company is licenced to transport 50,000 tpa of lead/zinc concentrate during daylight hours. The company is limited to eight truck movements per day (entering and leaving the site) averaged over a calendar month. This month, a total of 2,717 tonnes of concentrate was transported to the Hermidale rail siding with an average of 1.84 truck movements per day (Table 12).

Table 12. Summary of the concentrate truck movements from the Hera Mine to Hermidale rail siding for the month.

Date	Time	Company ID	Truck Dry Tonnes
1/12/2016	06:00:00	1263	49.72
1/12/2016	10:00:00	1264	49.50
1/12/2016	11:30:00	1265	49.32
1/12/2016	15:00:00	1266	49.02
2/12/2016	07:00:00	1267	48.67
2/12/2016	07:30:00	1268	49.07
2/12/2016	11:00:00	1269	49.36
2/12/2016	11:30:00	1270	49.51
2/12/2016	14:25:00	1271	49.50
2/12/2016	15:30:00	1272	49.50
5/12/2016	06:30:00	1273	23.60
5/12/2016	09:30:00	1274	48.55
5/12/2016	11:45:00	1275	48.43
5/12/2016	12:00:00	1276	48.96
5/12/2016	15:00:00	1277	49.35
6/12/2016	14:30:00	1278	48.86
7/12/2016	15:00:00	1279	48.83
8/12/2016	10:00:00	1280	49.98
8/12/2016	17:00:00	1281	48.93
9/12/2016	14:15:00	1285	49.05
9/12/2016	07:15:00	1282	48.97
9/12/2016	10:40:00	1283	49.48
9/12/2016	12:00:00	1284	49.18
9/12/2016	17:15:00	1286	49.25
12/12/2016	12:12:00	1287	49.11
12/12/2016	13:00:00	1288	49.22
12/12/2016	17:00:00	1289	49.57
13/12/2016	09:30:00	1290	49.26
13/12/2016	12:00:00	1291	49.34
14/12/2016	09:15:00	1292	49.49
14/12/2016	11:00:00	1293	49.01
14/12/2016	13:00:00	1294	49.43
18/12/2016	09:00:00	1295	47.57
18/12/2016	13:20:00	1296	48.09
19/12/2016	09:00:00	1297	48.33

19/12/2016	13:15:00	1298	47.85
19/12/2016	13:30:00	1299	47.95
19/12/2016	16:00:00	1300	46.97
20/12/2016	07:00:00	1301	47.58
20/12/2016	07:30:00	1302	47.76
20/12/2016	10:15:00	1303	47.93
20/12/2016	10:30:00	1304	47.42
20/12/2016	13:15:00	1305	48.13
20/12/2016	13:30:00	1306	48.84
20/12/2016	16:30:00	1307	48.30
21/12/2016	07:00:00	1308	48.02
21/12/2016	11:00:00	1309	49.12
22/12/2016	16:15:00	1310	48.68
26/12/2016	09:40:00	1311	46.43
26/12/2016	13:00:00	1312	46.83
26/12/2016	16:45:00	1313	47.04
27/12/2016	08:00:00	1314	46.84
27/12/2016	12:30:00	1315	24.25
27/12/2016	16:15:00	1316	46.31
28/12/2016	07:30:00	1317	47.11
28/12/2016	11:30:00	1318	47.36
28/12/2016	15:30:00	1319	47.38
Average Truck Movements per day December 2016		1.84	
Total Tonnes			2,717.1

Complaints

No complaints were received in December 2016.