

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	January 2017
Date Published	15 March 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 January 2017. Figure 2 is a wind rose for the month.

Table 2. Summary of meteorological data for January 2017.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	11.91	28.23	28.23	42.65
Wind Speed (m/s)	Continuous	0.00	2.48	2.28	9.09
Sigma Theta (°)	Continuous	3.07	22.06	17.17	102.33
Rainfall (mm)	Continuous	0.00	0.01	0.00	2.80
Relative Humidity (%)	Continuous	14.38	51.96	48.46	98.59

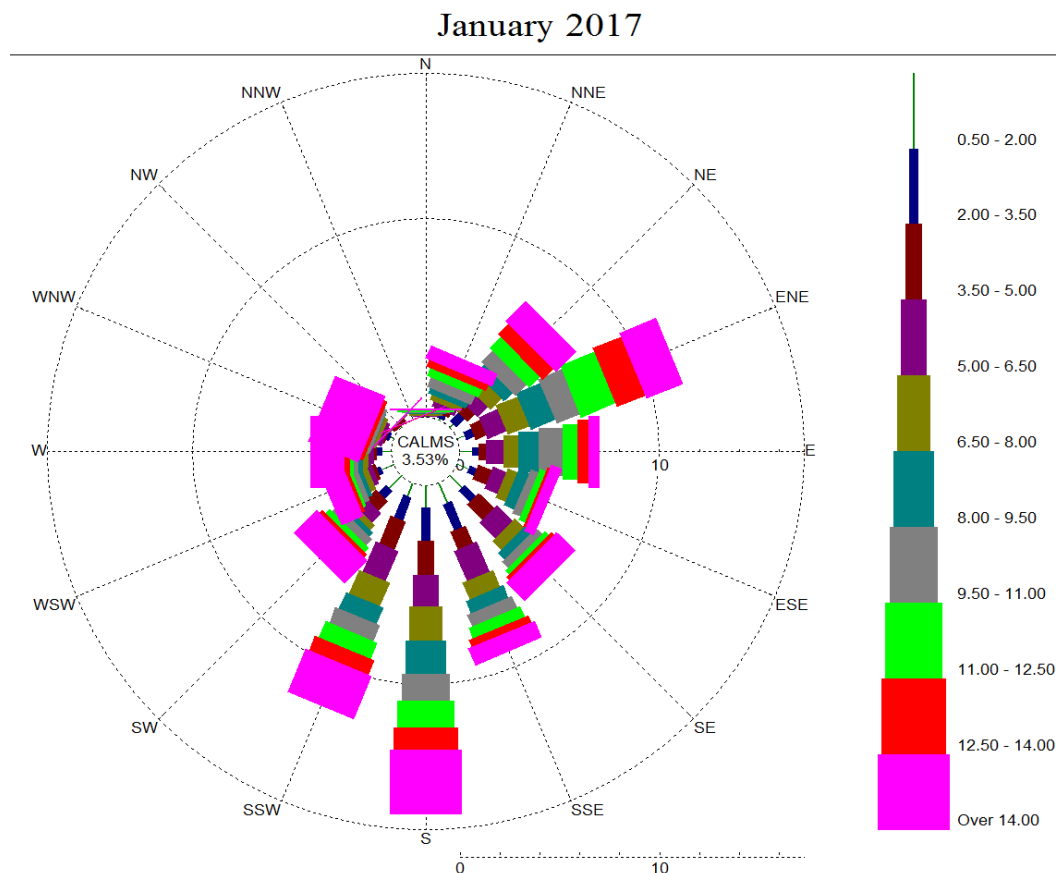


Figure 2. Wind rose January 2017.

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.

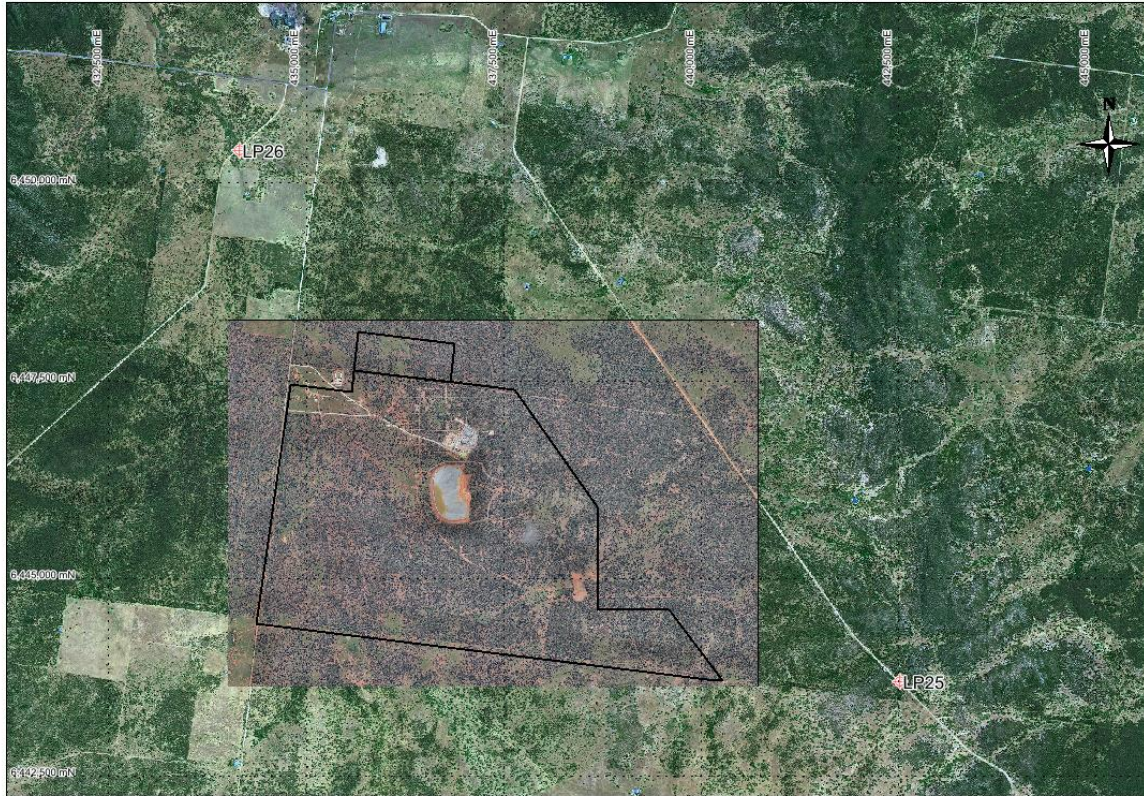


Figure 4. Licensed surface water monitoring points located offsite. The black outline represents the Project Area.

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 3, 4, 25 and 26 did not discharge for the month.

Table 4. Summary of surface water quality results for January 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	0	0																
3	No flow																			
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 for January 2017 are reported in Table 6.

Table 6: Summary of January 2017 groundwater quality results.

Licence Point	Analyte (mg/L)													EC (mS/cm)
	Sb	As	HCO3-	B	Cd	Ca	CO3-2	Cl	Cr	Cu	CN- (Free)	CN- (Total)	CN- (WAD)	
7	<0.001	<0.001	648	0.42	<0.0001	191	<1	984	<0.001	<0.001	<0.004	<0.004	<0.004	4090
9	<0.001	<0.001	642	0.69	<0.0001	207	<1	932	<0.001	<0.001	<0.004	<0.004	<0.004	5040
17	<0.001	0.002	340	0.38	<0.0001	48	<1	238	<0.001	0.002	<0.004	<0.004	<0.004	1445
19	<0.001	<0.001	32	0.08	<0.0001	4	<1	43	<0.001	0.018	<0.004	<0.004	<0.004	29.7
27	<0.001	<0.001	508	1.32	<0.0001	77	<1	1100	<0.001	0.003	<0.004	<0.004	<0.004	5040
28	0.004	0.001	694	0.71	<0.0001	212	<1	944	<0.001	<0.001	<0.004	<0.004	<0.004	4650
29	0.018	<0.001	329	0.46	<0.0001	51	<1	326	<0.001	0.004	<0.004	<0.004	<0.004	4880
30	0.002	0.002	924	1.7	<0.0001	79	38	1450	<0.001	<0.001	<0.004	<0.004	<0.004	6550
31	<0.001	0.004	380	0.89	<0.0001	102	<1	1250	<0.001	<0.001	<0.004	<0.004	<0.004	5470
32	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
33	<0.001	0.004	495	0.39	<0.0001	150	<1	566	<0.001	0.002	<0.004	<0.004	<0.004	3150
34											DRY	DRY	DRY	DRY
35											DRY	DRY	DRY	DRY
36											DRY	DRY	DRY	DRY
37											DRY	DRY	DRY	DRY
38											DRY	DRY	DRY	DRY
40	<0.001	<0.001	656	0.48	<0.0001	196	<1	1100	<0.001	<0.001	<0.004	<0.004	<0.004	4440
	Analyte (mg/L)													SWL (m)
	Fe	Pb	Mg	Hg	Mo	Ni	pH	K	Ag	Na	Sn	TDS	Zn	
7	0.11	0.002	147	<0.0001	<0.001	<0.001	7	18	<0.001	511	<0.001	3050	0.01	53.48
9	1.29	<0.001	204	<0.0001	<0.001	<0.001	7.7	32	<0.001	771	<0.001	3820	0.006	
17	<0.05	0.004	57	<0.0001	<0.001	0.001	6.93	13	<0.001	180	<0.001	767	0.02	
19	0.18	0.002	6	<0.0001	<0.001	<0.001	7.36	3	<0.001	44	<0.001	147	0.08	
27	0.52	0.006	132	<0.0001	0.001	0.002	7.1	42	<0.001	950	<0.001	3380	0.044	54.02
28	1.88	0.002	206	<0.0001	<0.001	0.003	7	33	<0.001	687	<0.001	3710	0.04	81.79
29	<0.05	0.007	69	<0.0001	0.001	0.002	7.43	39	<0.001	311	<0.001	1400	0.057	61.69
30	0.35	0.002	106	<0.0001	<0.001	0.001	7.4	44	<0.001	1390	<0.001	4420	0.022	59.72
31	0.24	<0.001	126	<0.0001	<0.001	0.001	8	34	<0.001	987	<0.001	3550	0.015	
32	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
33	4.05	0.004	167	<0.0001	<0.001	0.012	7.1	32	<0.001	398	<0.001	2560	0.098	
34											DRY	DRY	DRY	DRY
35											DRY	DRY	DRY	DRY
36											DRY	DRY	DRY	DRY
37											DRY	DRY	DRY	DRY
38											DRY	DRY	DRY	DRY
40	0.07	0.001	171	<0.0001	<0.001	<0.001	7.26	18	<0.001	683	<0.001	3370	0.006	53.87

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 7.

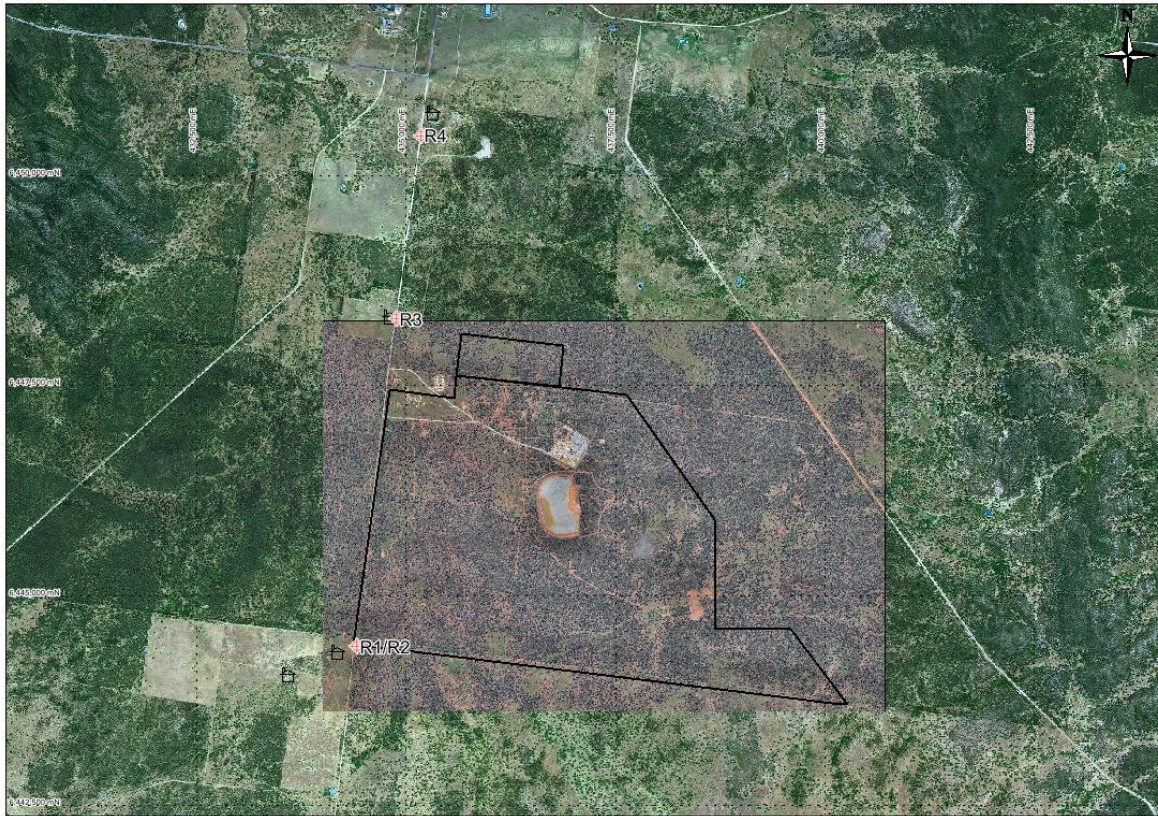


Figure 6. Licenced noise monitoring locations. The black outline represents the approximate project area.

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

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 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)

The Company conducted a total of 81 blasts in January 2016. The characteristics of each blast are presented in Table 9. No exceedances were recorded for the month.

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

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

Tuesday, 13 January 2016	6:45	Night	<0.35	
Tuesday, 13 January 2016	13:00	Day	<0.35	
Wednesday, 14 January 2016	18:45	Evening	<0.35	
Wednesday, 14 January 2016	18:45	Evening	<0.35	
Thursday, 15 January 2016	6:45	Night	<0.35	
Thursday, 15 January 2016	6:45	Night	<0.35	
Thursday, 15 January 2016	7:30	Day	<0.35	
Thursday, 15 January 2016	7:30	Day	<0.35	
Friday, 16 January 2016	7:30	Night	<0.35	
Friday, 16 January 2016	7:30	Night	<0.35	
Saturday, 17 January 2016	6:30	Night	<0.35	
Saturday, 17 January 2016	6:30	Night	<0.35	
Sunday, 18 January 2016	6:30	Night	<0.35	
Sunday, 18 January 2016	6:30	Night	<0.35	
Monday, 19 January 2016	6:40	Sunday	<0.35	
Monday, 19 January 2016	6:40	Sunday	<0.35	
Monday, 19 January 2016	14:25	Day	<0.35	
Tuesday, 20 January 2016	6:50	Night	<0.35	
Tuesday, 20 January 2016	6:50	Night	<0.35	
Tuesday, 20 January 2016	18:30	Evening	<0.35	
Wednesday, 21 January 2016	6:25	Night	<0.35	
Wednesday, 21 January 2016	6:25	Night	<0.35	
Wednesday, 21 January 2016	13:05	Day	<0.35	
Thursday, 22 January 2016	7:40	Day	<0.35	
Thursday, 22 January 2016	7:40	Day	<0.35	
Thursday, 22 January 2016	18:35	Evening	<0.35	
Friday, 23 January 2016	7:00	Day	<0.35	
Friday, 23 January 2016	7:00	Day	<0.35	
Saturday, 24 January 2016	6:30	Night	<0.35	
Saturday, 24 January 2016	6:30	Night	<0.35	
Sunday, 25 January 2016	7:00	Day	<0.35	
Sunday, 25 January 2016	7:00	Day	<0.35	
Tuesday, 27 January 2016	6:30	Night	<0.35	
Sunday, 25 January 2016	6:30	Sunday	<0.35	
Sunday, 25 January 2016	6:30	Sunday	<0.35	
Monday, 26 January 2016	7:00	Day	<0.35	
Monday, 26 January 2016	7:00	Day	<0.35	
Tuesday, 27 January 2016	6:30	Night	<0.35	
Wednesday, 28 January 2016	6:30	Night	<0.35	
Wednesday, 28 January 2016	6:30	Night	<0.35	
Thursday, 29 January 2016	6:30	Night	<0.35	
Thursday, 29 January 2016	6:30	Night	<0.35	
Friday, 30 January 2016	6:30	Night	<0.35	
Friday, 30 January 2016	18:30	Evening	0.377	<88
Saturday, 31 January 2016	6:58	Night	0.377	<88
Saturday, 31 January 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 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 January 2016 have been summarised in Table 11. No exceedances have been recorded this month. No result was recorded on the 24 and 30 January as the HVAS power tripped out due to electrical storms in the area.

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

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	27.45
PM-10 (µg/m ³)	µg/m ³	30	Annual	13.60
	µg/m ³	50	6/01/2017	28.00
	µg/m ³	50	12/01/2017	54.00
	µg/m ³	50	18/01/2017	13.00
	µg/m ³	50	24/01/2017	
	µg/m ³	50	30/01/2017	
Deposited Dust (DDG1)	g/m ² /month	4	Annual	2.20
			Annual	1.33

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 12.

Table 12. 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 13).

Table 13. Summary of the concentrate truck movements from the Hera Mine to Hermidale rail siding for the month.

Date	Time	Company ID	Truck Dry Tonnes
4/01/2017	13:00:00	1320	45.99
4/01/2017	16:45:00	1321	45.72
5/01/2017	12:00:00	1322	47.65
5/01/2017	15:45:00	1323	47.16
6/01/2017	07:45:00	1324	46.50
6/01/2017	11:15:00	1325	46.86
6/01/2017	11:30:00	1326	46.21
8/01/2017	10:30:00	1327	48.46
8/01/2017	14:00:00	1328	48.61
10/01/2017	08:30:00	1329	49.19
11/01/2017	06:30:00	1330	48.34
11/01/2017	12:00:00	1331	48.32
12/01/2017	09:00:00	1332	48.34
12/01/2017	15:45:00	1333	48.47
13/01/2017	07:00:00	1334	48.82
13/01/2017	08:20:00	1335	48.40
13/01/2017	12:00:00	1336	48.09
13/01/2017	13:00:00	1337	48.88
13/01/2017	15:20:00	1338	48.47
16/01/2017	07:00:00	1339	48.78
16/01/2017	11:00:00	1340	48.98
16/01/2017	13:30:00	1341	49.30
17/01/2017	07:30:00	1342	49.76
17/01/2017	10:30:00	1343	49.23
17/01/2017	11:10:00	1344	48.62
17/01/2017	13:30:00	1345	48.92
17/01/2017	13:50:00	1346	47.93
18/01/2017	06:30:00	1347	49.28
18/01/2017	11:00:00	1348	49.42
18/01/2017	13:30:00	1349	49.33
19/01/2017	07:00:00	1350	49.48
19/01/2017	11:00:00	1351	49.47
19/01/2017	14:00:00	1352	48.89

19/01/2017	17:00:00	1353	48.20
20/01/2017	07:00:00	1354	49.45
23/01/2017	06:30:00	1355	49.54
23/01/2017	10:00:00	1356	49.54
23/01/2017	12:30:00	1357	49.68
25/01/2017	07:00:00	1358	49.09
25/01/2017	10:30:00	1359	49.01
25/01/2017	13:00:00	1360	49.04
26/01/2017	09:00:00	1361	49.28
27/01/2017	07:00:00	1362	49.01
27/01/2017	09:40:00	1363	49.03
27/01/2017	10:10:00	1364	49.06
27/01/2017	13:00:00	1365	49.42
28/01/2017	08:00:00	1366	48.60
28/01/2017	11:00:00	1367	48.83
29/01/2017	12:00:00	1368	48.61
29/01/2017	15:10:00	1369	49.29
30/01/2017	07:30:00	1370	48.78
30/01/2017	10:30:00	1371	49.32
Average Truck Movements per day January 2016		1.68	
Total Tonnes			2,528.6

Complaints

One complaint was received in January 2016. The complaint related to alleged trespassing of Company employees on private land (Table 14).

Table 14 Complaints received by the Company in January 2017.

Date	Pollution complaint category
29/01/2017	Trespassing