

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	July 2017
Date Published	4 Oct 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 July 2017. Figure 2 is a wind rose for the month.

Table 2. Summary of meteorological data for July 2017.

Pollutant	No. of measurements for month	Min. value	Mean value	Median value	Max. value
Air Temperature (°C)	Continuous	-7.27	8.19	9.55	22.39
Wind Speed (m/s)	Continuous	0.00	1.58	1.12	7.34
Sigma Theta (°)	Continuous	1.04	22.66	18.36	102.75
Rainfall (mm)	Continuous	0.00	0.00	0.00	0.80
Relative Humidity (%)	Continuous	26.01	67.14	70.34	96.19

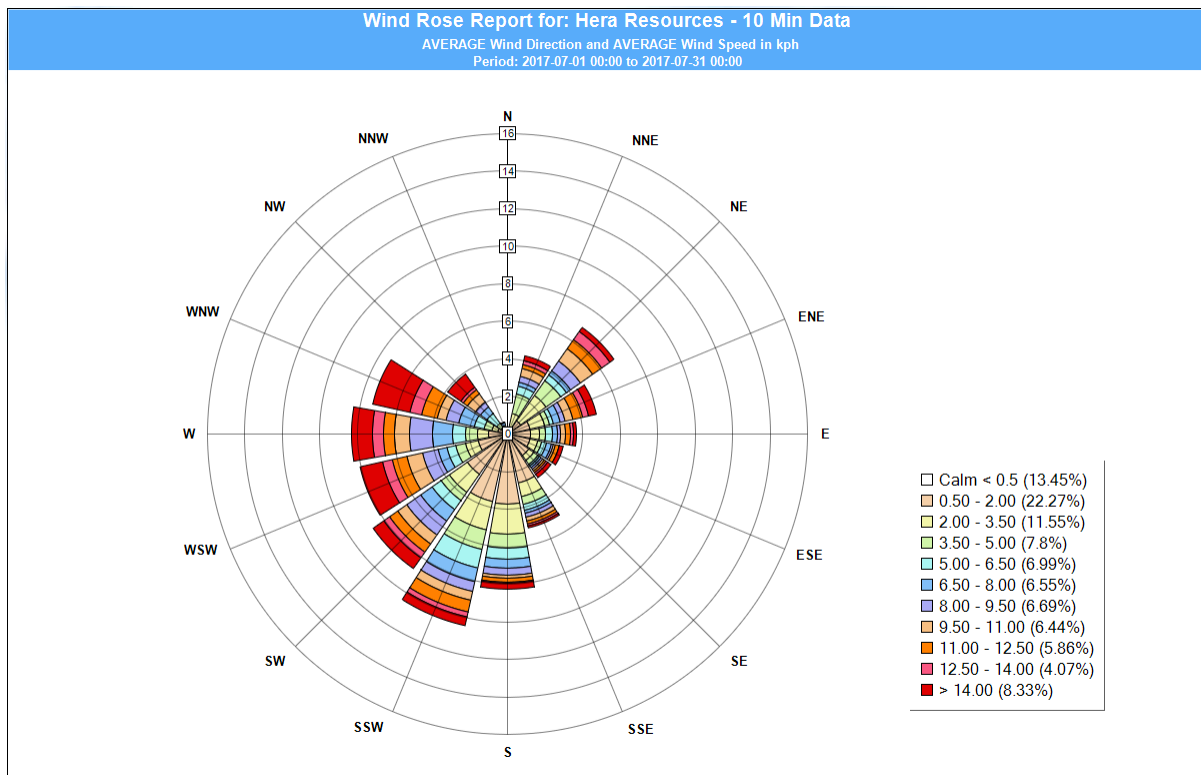


Figure 2. Wind rose July 2017.

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.

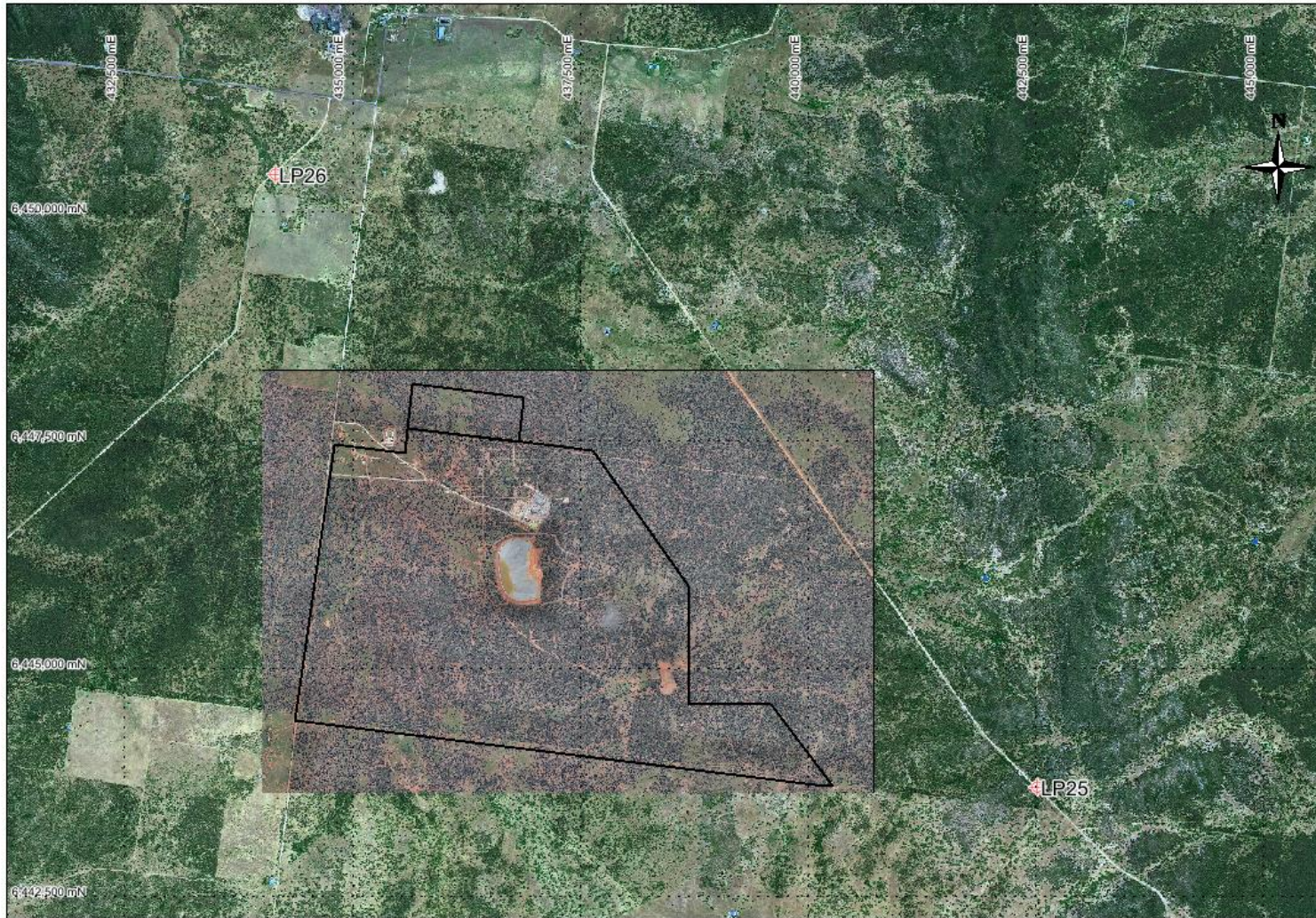


Figure 4. Licensed surface water monitoring points located offsite. The black outline represents the mining leases.

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. Licence Point 1 was not sampled daily during discharge on one occasion this month. This non-compliance was reported to the Environment Protection Authority 24 Jul 2017.

Table 4. Summary of surface water quality results for July 2017.

	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	0.97	0	30																
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 and piezometers. A summary of the licence conditions associated with these licence points is presented in Table 5

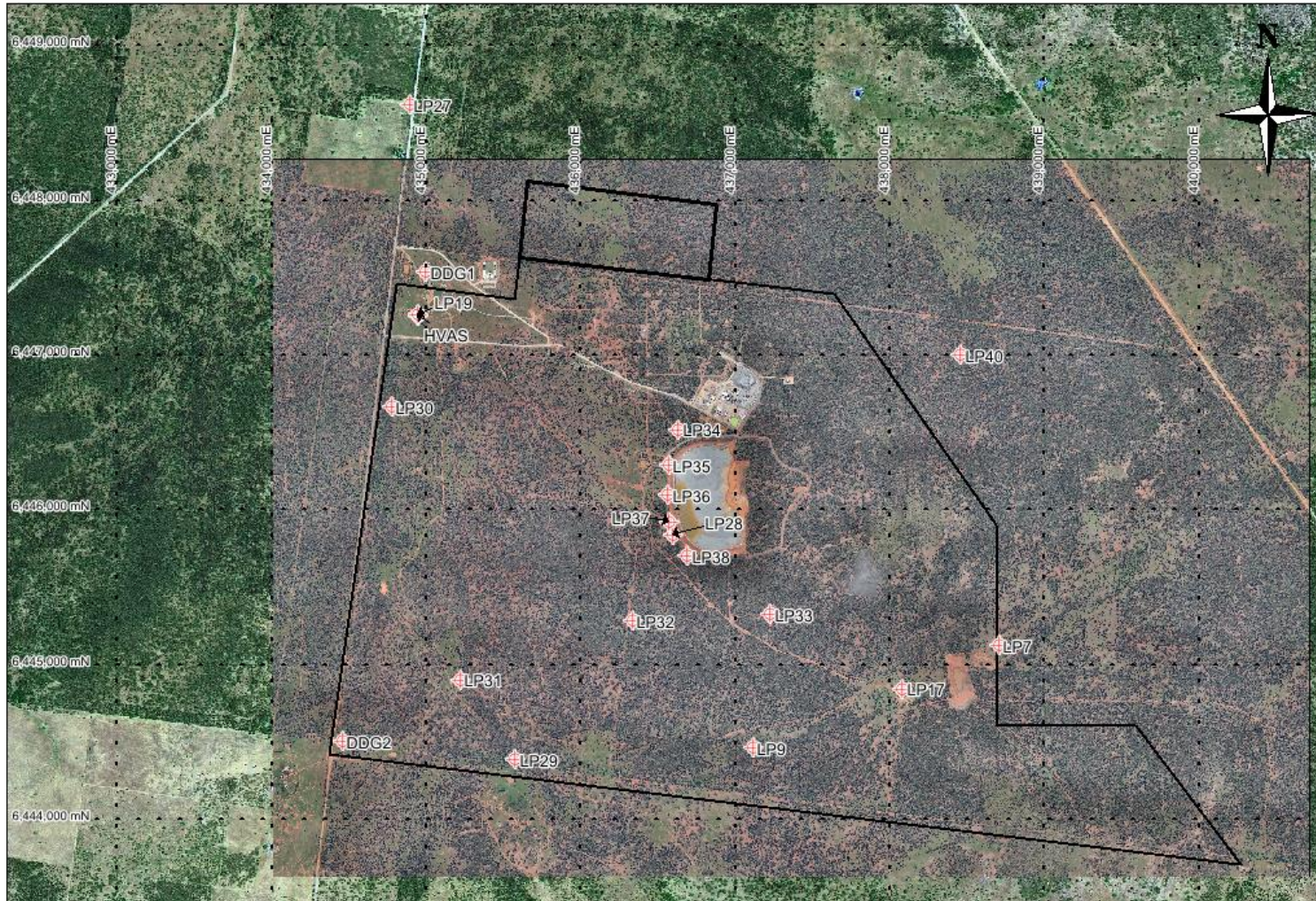


Figure 5. Licensed groundwater and air quality monitoring points.

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 July 2017 are reported in Table 6.

Table 6: Summary of April 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	625	0.4	<0.0001	168	<1	974	<0.001	<0.001	<0.004	<0.004	<0.004	4840	
9	<0.001	<0.001	598	0.65	<0.0001	176	<1	920	<0.001	<0.001	<0.004	<0.004	<0.004	5760	
17	<0.001	0.001	308	0.3	0.0002	44	<1	269	<0.001	0.002	<0.004	<0.004	<0.004	1588	
19	<0.001	<0.001	404	0.92	<0.0001	54	<1	838	<0.001	0.006	<0.004	<0.004	<0.004	4390	
27	<0.001	<0.001	469	1.2	0.0002	63	<1	1080	<0.001	0.003	<0.004	<0.004	<0.004	5690	
28	<0.001	<0.001	655	0.63	<0.0001	177	<1	928	<0.001	<0.001	<0.004	<0.004	<0.004	5520	
29	0.019	<0.001	314	0.45	<0.0001	40	<1	332	<0.001	<0.001	<0.004	<0.004	<0.004	2180	
30	0.004	0.002	1210	1.68	<0.0001	80	<1	1590	<0.001	<0.001	<0.004	<0.004	<0.004	7480	
31	0.001	<0.001	345	0.85	<0.0001	85	<1	1220	<0.001	<0.001	<0.004	<0.004	<0.004	6150	
32	0.001	<0.001	667	0.87	<0.0001	239	<1	882	<0.001	<0.001	<0.004	<0.004	<0.004	6640	
33	<0.001	0.004	458	0.36	<0.0001	134	<1	567	<0.001	<0.001	<0.004	<0.004	<0.004	3840	
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	609	0.45	<0.0001	165	<1	1080	<0.001	<0.001	<0.004	<0.004	<0.004	5320	
	Analyte (mg/L)													SWL (m)	
	Fe	Pb	Mg	Hg	Mo	Ni	pH	K	Ag	Na	Sn	TDS	Zn		
7	0.08	<0.001	162	<0.0001	<0.001	<0.001	6.97	16	<0.001	533	<0.001	2590	<0.005	52.96	
9	1.32	<0.001	226	<0.0001	<0.001	<0.001	7.13	26	<0.001	671	<0.001	3470	0.008		
17	<0.05	0.003	52	<0.0001	<0.001	0.002	6.87	11	<0.001	174	<0.001	802	0.036		
19	<0.05	<0.001	93	<0.0001	<0.001	0.001	7.34	29	<0.001	638	<0.001	2230	0.066		
27	<0.05	0.001	142	<0.0001	<0.001	0.001	7.31	34	<0.001	903	<0.001	3130	0.07	54.2	
28	1.62	<0.001	224	<0.0001	<0.001	0.001	7.01	26	<0.001	613	<0.001	3240	0.011	82.66	
29	<0.05	0.002	57	<0.0001	<0.001	0.002	7.25	14	<0.001	308	<0.001	1110	0.063	62.18	
30	0.06	<0.001	106	<0.0001	<0.001	0.002	7.56	37	<0.001	1370	<0.001	4230	0.01	58.91	
31	<0.05	<0.001	134	<0.0001	<0.001	0.001	7.42	30	<0.001	864	<0.001	3530	0.024		
32	<0.05	<0.001	263	<0.0001	<0.001	0.002	7.26	34	<0.001	928	<0.001	4660	0.005		
33	4.26	0.001	159	<0.0001	<0.001	0.01	6.74	19	<0.001	400	<0.001	2210	0.052		
34											DRY				
35											DRY				
36											DRY				
37											DRY				
38											DRY				
40	<0.05	<0.001	182	<0.0001	0.001	<0.001	7.19	15	<0.001	589	<0.001	2740	0.006	53.86	

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.

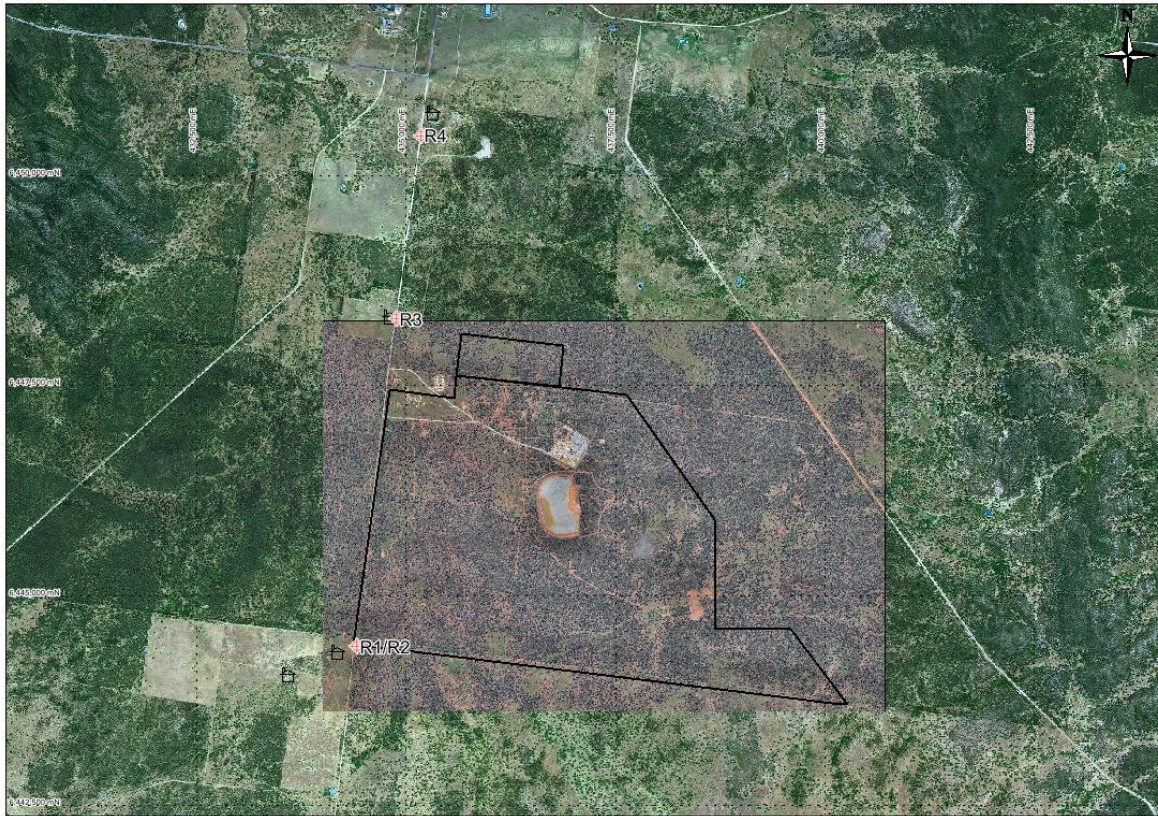


Figure 6. Licenced noise monitoring locations. The black outline represents the approximate project area.

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 (EMM Consultants) was engaged to conduct a noise assessment in July 2017. The results are presented in Table 8.

Table 8. Summary of noise monitoring conducted by EMM Consultants in February 2017.

Receiver	Date	Time	LAeq Limit	LA Max Limit (dB)	LAeq Site Contribution (dB)	LA Max Site Contribution (dB)
R1-R2	24/07/2017	14:07	35	n/a	Inaudible (IA)	n/a
R3	24/07/2017	13:47	35	n/a	IA	n/a
R4	24/07/2017	13:28	35	n/a	IA	n/a
R1-R2	24/07/2017	21:25	35	n/a	26	n/a
R3	24/07/2017	21:03	35	n/a	30	n/a
R4	24/07/2017	20:42	35	n/a	24	n/a
R1-R2	24/07/2017	22:00	35	45	27	24
R3	24/07/2017	22:55	35	45	29	25
R4	24/07/2017	23:50	35	45	25	21
R1-R2	24/07/2017	22:15	35	45	29	25
R3	24/07/2017	23:10	35	45	32	31
R4	25/07/2017	00:06	35	45	26	22
R1-R2	24/07/2017	22:31	35	45	29	25
R3	24/07/2017	23:26	35	45	32	31
R4	25/07/2017	00:32	35	45	29	26

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 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 (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 76 blasts in July 2017. The characteristics of each blast are presented in Table 10. No exceedances were recorded for the month.

Table 10. Summary of blast monitoring results for July 2017.

Date	Time	Time period	Vibration (mm/s)	Overpressure (dB)
Saturday, 1 July 2017	6:45	Night	<0.35	
Sunday, 2 July 2017	6:45	Sunday	<0.35	
Sunday, 2 July 2017	16:45	Sunday	<0.35	
Sunday, 2 July 2017	18:45	Sunday	<0.35	
Sunday, 2 July 2017	18:45	Sunday	<0.35	
Sunday, 2 July 2017	18:45	Sunday	<0.35	
Monday, 3 July 2017	19:00	Evening	<0.35	
Monday, 3 July 2017	21:30	Evening	<0.35	
Tuesday, 4 July 2017	18:30	Evening	<0.35	
Tuesday, 4 July 2017	18:30	Evening	<0.35	
Wednesday, 5 July 2017	13:00	Day	<0.35	
Wednesday, 5 July 2017	13:00	Day	<0.35	
Thursday, 6 July 2017	7:00	Day	<0.35	
Friday, 7 July 2017	7:00	Day	<0.35	
Saturday, 8 July 2017	7:00	Day	<0.35	
Saturday, 8 July 2017	7:00	Day	<0.35	
Sunday, 9 July 2017	7:00	Sunday	<0.35	
Sunday, 9 July 2017	7:00	Sunday	<0.35	
Monday, 10 July 2017	6:27	Night	<0.35	
Monday, 10 July 2017	7:00	Day	<0.35	
Monday, 10 July 2017	7:00	Day	<0.35	
Monday, 10 July 2017	19:00	Evening	<0.35	
Tuesday, 11 July 2017	7:00	Day	<0.35	
Tuesday, 11 July 2017	7:00	Day	<0.35	
Tuesday, 11 July 2017	18:30	Evening	<0.35	
Wednesday, 12 July 2017	7:00	Day	<0.35	
Wednesday, 12 July 2017	7:00	Day	<0.35	
Wednesday, 12 July 2017	18:45	Evening	<0.35	
Thursday, 13 July 2017	1:00	Night	<0.35	
Thursday, 13 July 2017	18:45	Evening	<0.35	
Thursday, 13 July 2017	18:45	Evening	<0.35	<88
Friday, 14 July 2017	13:00	Day	<0.35	<88
Friday, 14 July 2017	18:45	Evening	<0.35	<88
Sunday, 16 July 2017	13:00	Sunday	<0.35	
Monday, 17 July 2017	1:00	Night	<0.35	
Monday, 17 July 2017	18:30	Evening	<0.35	
Tuesday, 18 July 2017	0:15	Night	<0.35	
Tuesday, 18 July 2017	18:45	Evening	<0.35	
Thursday, 20 July 2017	12:30	Day	<0.35	
Thursday, 20 July 2017	18:30	Evening	<0.35	
Thursday, 20 July 2017	23:00	Night	<0.35	
Friday, 21 July 2017	18:30	Evening	<0.35	
Friday, 21 July 2017	18:30	Evening	<0.35	
Friday, 21 July 2017	22:00	Night	<0.35	

Saturday, 22 July 2017	18:30	Evening	<0.35	
Sunday, 23 July 2017	6:30	Sunday	<0.35	
Sunday, 23 July 2017	18:30	Sunday	<0.35	
Sunday, 23 July 2017	18:30	Sunday	<0.35	
Monday, 24 July 2017	6:30	Night	<0.35	
Tuesday, 25 July 2017	6:30	Night	<0.35	
Tuesday, 25 July 2017	6:30	Night	<0.35	
Tuesday, 25 July 2017	6:30	Night	<0.35	
Wednesday, 26 July 2017	18:45	Evening	<0.35	
Thursday, 27 July 2017	6:30	Night	<0.35	
Thursday, 27 July 2017	6:30	Night	<0.35	
Thursday, 27 July 2017	6:30	Night	<0.35	
Thursday, 27 July 2017	6:30	Night	<0.35	
Thursday, 27 July 2017	18:45	Evening	<0.35	
Thursday, 27 July 2017	18:45	Evening	<0.35	
Friday, 28 July 2017	6:45	Night	<0.35	
Friday, 28 July 2017	6:45	Night	<0.35	
Friday, 28 July 2017	19:00	Evening	<0.35	
Friday, 28 July 2017	19:00	Evening	<0.35	
Saturday, 29 July 2017	6:45	Night	<0.35	
Saturday, 29 July 2017	6:45	Night	<0.35	
Saturday, 29 July 2017	11:15	Day	<0.35	
Saturday, 29 July 2017	18:38	Evening	<0.35	
Sunday, 30 July 2017	7:00	Sunday	<0.35	
Sunday, 30 July 2017	7:00	Sunday	<0.35	
Sunday, 30 July 2017	7:00	Sunday	<0.35	
Sunday, 30 July 2017	18:45	Sunday	<0.35	
Sunday, 30 July 2017	18:45	Sunday	<0.35	
Monday, 31 July 2017	7:00	Day	<0.35	
Monday, 31 July 2017	7:00	Day	<0.35	
Monday, 31 July 2017	18:38	Evening	<0.35	
Monday, 31 July 2017	19:00	Evening	<0.35	

Air Quality Monitoring

The Company has two High Volume Air Samplers (HVAS), 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 11.

Table 11. 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 July 2017 have been summarised in Table 12. One non-compliance was reported for the month. The non-compliance was reported to the Department of Planning and Environment on 25 Jul 2017.

Table 12. Summary of air quality monitoring results for July 2017.

Pollutant	Unit	Limit	Averaging Period	Result
TSP	µg/m ³	90	Annual	36.40
PM-10 (µg/m ³)	µg/m ³	30	Annual	17.37
	µg/m ³	50	5/07/2017	1.00
	µg/m ³	50	11/07/2017	12.00
	µg/m ³	50	17/07/2017	9.00
	µg/m ³	50	23/07/2017	18.00
	µg/m ³	50	29/07/2017	20.00
Deposited Dust (DDG1)	g/m ² /month	4	Annual	2.21
Deposited Dust (DDG2)	g/m ² /month	4	Annual	1.86

Gold Room Stack Monitoring

The Company has two licenced gold room stack monitoring points (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
39	
Pollutant	
Nitric Oxide (mg/m ³)	

Gold Room stack monitoring is conducted on an annual basis. This was last conducted in February 2017.

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 (Table 14).

Table 14. Summary of the concentrate truck movements from the Hera Mine to Hermidale rail siding for the month.

Date	Time	Company ID	Truck Dry Tonnes
2/07/2017	10:00:00	1650	48.37
2/07/2017	14:00:00	1651	48.46
3/07/2017	11:00:00	1652	48.58
3/07/2017	12:00:00	1653	48.28
3/07/2017	14:45:00	1654	48.31
3/07/2017	16:00:00	1655	48.14
4/07/2017	07:10:00	1656	47.57
4/07/2017	07:30:00	1657	48.72
4/07/2017	13:30:00	1658	49.50
5/07/2017	10:00:00	1659	47.48
5/07/2017	10:30:00	1660	47.44
5/07/2017	12:50:00	1661	48.39
5/07/2017	13:05:00	1662	47.41
6/07/2017	14:30:00	1663	48.86
6/07/2017	14:45:00	1664	48.37
6/07/2017	15:00:00	1665	47.94
7/07/2017	07:00:00	1666	47.98
7/07/2017	10:00:00	1667	47.46
7/07/2017	12:10:00	1668	47.94
10/07/2017	09:50:00	1669	47.05
10/07/2017	10:30:00	1670	47.23
10/07/2017	11:55:00	1671	47.29
10/07/2017	12:00:00	1672	47.05
10/07/2017	13:15:00	1673	47.23
10/07/2017	14:00:00	1674	47.13
10/07/2017	15:20:00	1675	47.02
10/07/2017	15:30:00	1676	46.84
10/07/2017	16:30:00	1677	47.25
11/07/2017	07:00:00	1678	47.22
11/07/2017	07:30:00	1679	46.81
11/07/2017	08:00:00	1680	47.16
11/07/2017	09:00:00	1681	47.22
11/07/2017	11:15:00	1682	45.19
11/07/2017	12:00:00	1683	47.90
11/07/2017	13:00:00	1684	48.05
12/07/2017	07:15:00	1685	47.31
12/07/2017	07:30:00	1686	47.39

12/07/2017	10:45:00	1687	47.41
12/07/2017	11:00:00	1688	47.67
12/07/2017	14:00:00	1689	47.85
12/07/2017	14:30:00	1690	48.28
13/07/2017	07:15:00	1691	47.21
13/07/2017	07:30:00	1692	47.22
18/07/2017	10:30:00	1693	47.98
19/07/2017	12:10:00	1694	47.59
21/07/2017	11:30:00	1695	47.97
21/07/2017	12:00:00	1696	24.46
21/07/2017	12:30:00	1697	48.00
22/07/2017	08:45:00	1698	47.57
23/07/2017	10:30:00	1699	47.72
23/07/2017	11:00:00	1700	47.39
23/07/2017	14:30:00	1701	47.28
24/07/2017	11:30:00	1702	47.73
25/07/2017	10:30:00	1703	47.51
25/07/2017	11:30:00	1704	47.40
26/07/2017	14:30:00	1705	47.62
27/07/2017	07:00:00	1706	47.41
27/07/2017	08:00:00	1707	47.62
27/07/2017	09:30:00	1708	47.28
27/07/2017	10:15:00	1709	47.47
27/07/2017	11:30:00	1710	47.51
27/07/2017	12:30:00	1711	47.64
27/07/2017	13:30:00	1712	47.55
28/07/2017	09:00:00	1713	46.87
28/07/2017	11:30:00	1714	49.14
30/07/2017	11:45:00	1715	47.13
30/07/2017	13:00:00	1716	47.15
30/07/2017	15:10:00	1717	47.32
30/07/2017	15:50:00	1718	47.23
31/07/2017	11:45:00	1719	47.08
31/07/2017	12:00:00	1720	46.82
31/07/2017	12:40:00	1721	46.85
31/07/2017	12:55:00	1722	47.50
Average Truck Movements per day July 2017		2.35	
Total Tonnes			3,450.96

Complaints

No complaints were received this month.