


**HERA MINE  
ANNUAL ENVIRONMENTAL MANAGEMENT  
REPORT  
MINING LEASE 1686**

*For the period*  
16 May 2015 to 15 May 2016



*Sunrise over Peak Hill, at Hera Mine*

<b>Name of Mine:</b>	HERA MINE		
<b>Mining Titles/ Leases:</b>	MINING LEASE 1686		
<b>MOP Commencement Date:</b>	May 2013	<b>MOP Completion Date:</b>	May 2018
<b>AEMR Commencement Date:</b>	16 May 2015	<b>AEMR Completion Date:</b>	15 May 2016
<b>Name of Lease Holder:</b>	Hera Resources Pty Ltd		
<b>Name of Mine Operator:</b>	Hera Resources Pty Ltd		
<b>Reporting Officer:</b>	Jonathon Thompson		
<b>Title:</b>	Environment Advisor		
<b>Signature:</b>			
<b>Date:</b>	16 August 2016		

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## ABBREVIATIONS

AEMR	Annual Environmental Management Report
AMI	Aurelia Metals Limited
dB	Decibels
CCC	Consultative Community Committee
DDG	Dust deposition gauges
DPE	Department of Planning and Environment
DPI – Water	Department of Industry, Division of Water
DRE	Department of Industry, Division of Resource and Energy
EPA	Environmental Protection Authority
EPL	Environment Protection Licence
ha	Hectare
HVAS	High volume air sampler
IBC	Integrated Bulk Container
LLS	Local Land Services
m <sup>3</sup>	Metre cubed
mbgl	Metres Below Ground Level
ML	Mega-litres
mm/s	Millimetre per second
MOP	Mining Operations Plan
ML	Mining lease
NSW	New South Wales
OEH	Office of Environment and Heritage
PA	Project Approval
PM <sup>10</sup>	Particulate Matter <10µm
RC	Reverse Circulation
RMS	Roads and Maritime Service
SDS	Safety Data Sheet
t	Tonnes
tpa	Tonnes per annum
TSF	Tailings Storage Facility
TSP	Total Suspended particulate
WAD	Weak Acid Dissociable
WAL	Water Access Licence
WREA	Waster rock encapsulate area
µg	Micrograms

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# 1 Introduction

## 1.1 Summary

The Hera Mine is owned and operated by Hera Resources Pty Ltd (the Company), a wholly owned subsidiary company of publically listed Aurelia Metals Ltd (AMI). The Company plans to mine up to 505,000 tonnes per annum (tpa) of metalliferous ore. The mine is located in central west New South Wales (NSW), approximately 4km south of the Nymagee Township and 100km south east of Cobar (**Figure 1.1.1**).

The Company received Project Approval (PA) 10\_0191 on 31 July 2012. Since this time, three modifications have been approved, the last in February 2016. Mining Lease (ML) 1686 was issued under the Mining Act 1992 on 16 May 2013 covering an area of 1,440ha.

This Annual Environmental Management Report (AEMR) has been prepared in accordance with the requirement for an environmental management report under Condition 4 of ML 1686 and for an Annual Review under Schedule 5 Condition 4 of PA 10\_0191. This AEMR addresses the period 16 May 2015 to 15 May 2016 (the reporting period).

The AEMR has generally been prepared in accordance with the Environmental Management Guidelines for Industry – The Annual Environmental Management Report (Version 3, 2006) issued by Department of Industry, Division of Resources and Energy (DRE).

Copies of this report are distributed to DRE, Department of Planning and Environment (DPE), Department of Industry, Division of Water (DPI – Water) Environmental Protection Authority (EPA), Office of Environment and Heritage (OEH), Central West Local Land Services (LLS), Trade and Investment – Crown Lands, Cobar Shire Council, Bogan Shire Council and local mining companies.

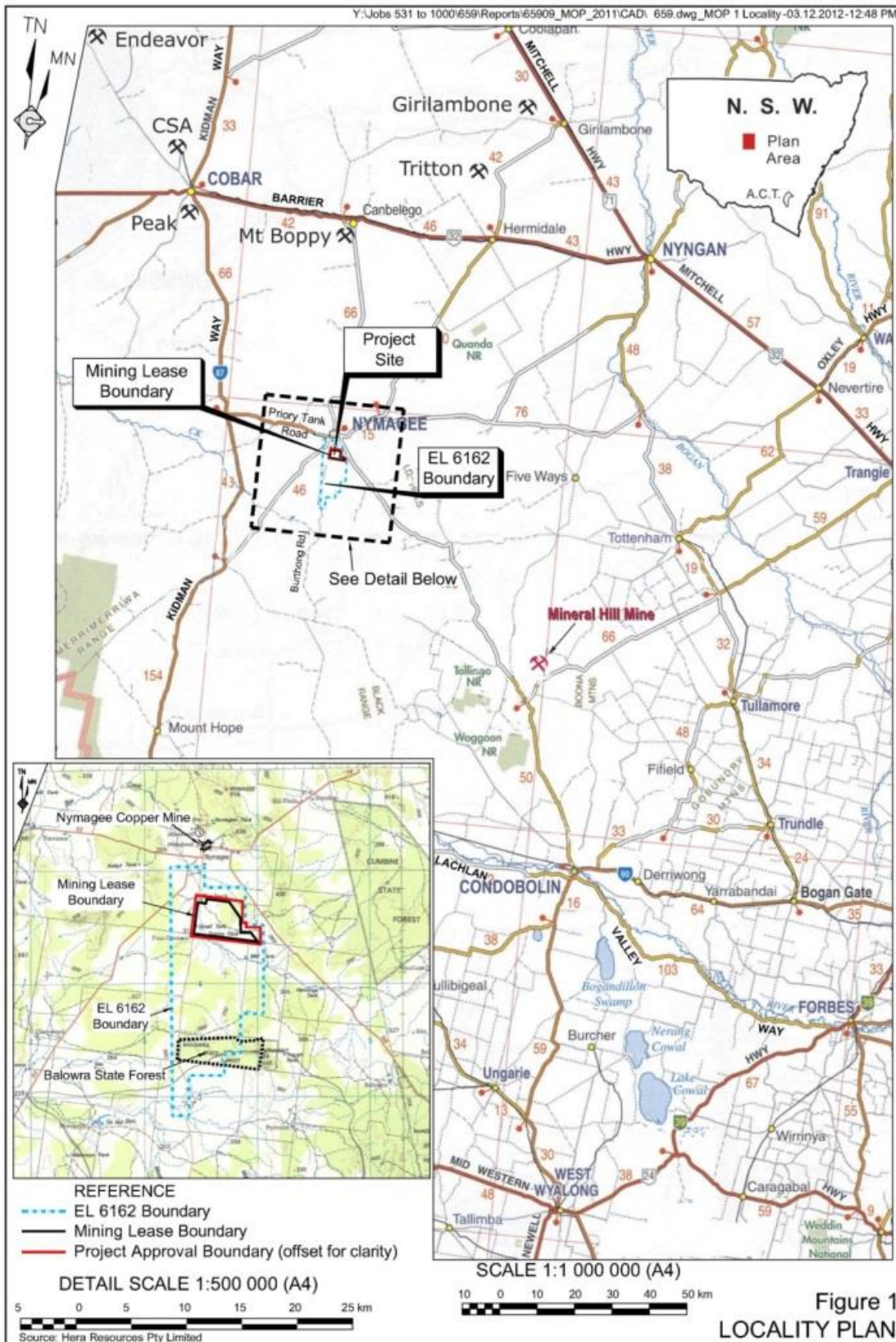


Figure 1.1.1 Site locality plan.

## 1.2 Consents, Lease and Licenses

Table 1.2.1 lists the relevant consents, leases and licenses associated with the Hera Mine.

**Table 1.2.1 Consent, Lease and Licences**

Consent/Lease/Licence	Licence Number	Date Granted & Duration	Relevant Authority
Construction Certificate	<b>379/2013</b>	Granted: <b>2 October 2013</b>	pro cert
Dangerous Goods Notification	<b>NDG038197</b>	Granted: <b>22 November 2011</b> Expires: <b>N/A</b>	SafeWork New South Wales
Development / Building Approvals	<b>2012/LD-00004</b>	Granted: <b>16 April 2012</b> Expires: <b>N/A</b>	Cobar Shire Council
Environment Protection Licence	<b>20179</b>	Granted: <b>18 March 2013</b>	NSW Environment Protection Authority
Explosives Licence	<b>XSTR200011</b>	Granted: <b>2012</b> Expires: <b>6 June 2017</b>	SafeWork NSW
Mining Lease	<b>ML1686</b>	Granted: <b>16 May 2013</b> Expires: <b>16 May 2034</b>	Department of Industry, Division of Resources and Energy
Mining Operations Plan	<b>N/A</b>	Granted: <b>16 May 2013</b> Expires: <b>6 June 2020</b>	Department of Industry, Division of Resources and Energy
Water Access Licence	<b>WAL28773</b>		DPI – Water
Western Land Lease	<b>WLL2455</b>	Granted: <b>April 1911</b> Perpetual Lease	Department of Lands.

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### 1.3 Mine Contacts

Table 1.3.1 lists the site contacts for the Hera Mine.

**Table 1.3.1 Hera Mine Contacts**

Name	Role	Phone number	Email Address
Scott Ramsay	General Manager	0427 971 462	Scott.ramsay@aureliametals.com
Jonathon Thompson	Environment Advisor	0488 065 144	Jonathon.Thompson@aureliametals.com

### 1.4 Action Required at Previous AEMR Review

The 2015-2016 AEMR was supplied to DRE, DPE, DPI – Water, EPA, OEH, Central West LLS, Trade and Investment – Crown Lands and Cobar Shire Council. Feedback was received from DPI – Water dated 27 July 2015, DRE dated 28 August 2015 and DPE dated 30 November 2015. No response was received from EPA, OEH, Central West LLS, Trade and Investment – Crown Lands or Cobar Shire Council. The actions raised by DPI – Water, DRE and DPE in their feedback and how these actions have been addressed are outlined in **Table 1.4.1**.

**Figure 1.4.1 Actions required from the 2015-2016 AEMR Review**

Action Required	Comment
<b>Department of Primary Industry, Division of Water Feedback</b>	
Table 1.2.1 includes a Water Access Licence (WAL 28773) related to the project, however it is recommended other approvals held under water legislation be included eg. 85WA752586 which is linked to WAL28773, WAL30298 linked to 85WA7528216 (Nymagee licence if this is used for the Hera project), and monitoring bore licences under the <i>Water Act 1912</i> .	<ul style="list-style-type: none"> <li>Information was provided to DPI – Water via email on 7 August 2015;</li> <li>Information pertaining to this reporting period has been included in <b>Section 3.4</b>.</li> </ul>
<p>DPI Water reviews the AEMR reports in line with the relevant annual review and monitoring conditions of the project approval (eg. Schedule 5, Condition 3 &amp; 4) and the reporting requirements for the Water Management Plan (Schedule 3, Condition 25). On this basis additional water monitoring results are requested to be included such as:</p> <ul style="list-style-type: none"> <li>Reporting of annual groundwater volumes extracted from each licensed extraction point (production bores and the underground mine) and compared against previous years and against the licensed entitlement (240 unit shares). There is the potential to expand Table 3.4.2 to include this information or prepare a separate water balance table to include water sources and uses.</li> <li>Reporting of water use such as dust suppression, processing plant and underground, administration buildings.</li> <li>Reporting against trigger levels.</li> </ul>	<ul style="list-style-type: none"> <li>Information was provided to DPI – Water via email on 7 August 2015;</li> <li>Information pertaining to this reporting period has been included in <b>Section 3.4</b>.</li> </ul>
Figure 3.4.1 shows Standing Water Levels for monitoring points labelled as “License Point” which are assumed to be based on the EPL, however the WMP and DPI Water’s licensing system has differing terminology. It is requested all naming terminologies be included in a table to enable an accurate comparison between the AEMR and the WMP.	<ul style="list-style-type: none"> <li>Information was provided to DPI – Water via email on 7 August 2015;</li> <li>Information has been included in this AEMR in <b>Section 3.4</b>.</li> </ul>
<p>As part of reviewing the AEMR and the recent applications for a production bore/monitoring bore, DPI Water has reviewed Aurelia Metals Ltd licences. Work approval 85WA752586 linked to WAL28773 currently authorises extraction from 6 bores and 1 excavation (underground mine). Under the former Water Act 1912 these licences/works included:</p> <ul style="list-style-type: none"> <li>o 85BL243254 – Skirka’s bore</li> <li>o 85BL256001 – Decline</li> <li>o 85BL256002 – Back Bore</li> <li>o 85BL256090 – WB8</li> <li>o 85BL256091 – WB10</li> <li>o 85BL256092 – WB11</li> <li>o 85BL256093 – WB13</li> </ul>	<ul style="list-style-type: none"> <li>Information was provided to DPI – Water via email on 7 August 2015;</li> <li>Application to amend the House Bore was made on 3 September 2015. This application was approved by DPI – Water on 7 January 2016</li> </ul>
<p>During the assessment of the production bore application for WB17, Aurelia Metals provided water level data for WB18 since its construction in March 2015. This data has been used by DPI Water’s hydrogeologist to consider the suitability of the proposed 75m trigger level for WB18 as detailed in the latest version of the Water Management Plan. The following comments are provided:</p> <ul style="list-style-type: none"> <li>Current standing water level at WB18 is approximately 62m.</li> </ul>	<ul style="list-style-type: none"> <li>A trained and qualified hydrogeologist (Aquade) was contracted to complete a review and provide recommendations for appropriate trigger levels. The report was complete and provided to DPI – Water via email on 14 December 2015.</li> </ul>

<ul style="list-style-type: none"> <li>• A drawdown of greater than 10m at WB18 to 75m is likely to result in unacceptable impacts to the neighbouring bore GW017386. The trigger level needs to be used as a warning to ensure unacceptable impacts do not occur.</li> <li>• Aurelia Metals are requested to review the appropriateness of the 75m trigger level at WB18. It is recommended the trigger level be revised upward to a shallower depth to consider the distance of WB18 to the closest production bores and the ability to limit the groundwater decline at the neighbours bore to a maximum of 2m in accordance with the Level 1 Minimal Impact Considerations of the NSW Aquifer Interference Policy (2012).</li> </ul>	
<b>Department of Industry, Division of Resources and Energy Feedback</b>	
<p>The May 2015 AEMR does not discuss waste rock management. Provide a letter report to the Department describing waste rock management in the reporting period, and specifically describe the status of compliance of waste rock management with PA10_0191 and the MOP. Include confirmation of separation of NAF and PAF materials, height of the WRD and capacity of the leachate pond for PAF material.</p> <p>Where there are non-compliances with PA10_0191 or the MOP advise the Department of any proposed actions (and their timing) to address the non-compliance, such as alternative stockpiling locations for NAF waste rock and / or direct emplacement of NAF rock in rehabilitation or drainage works.</p>	<ul style="list-style-type: none"> <li>• A Letter Report was supplied to DRE on 28 September 2015 addressing these concerns</li> <li>• Waste rock management for this reporting period is addressed in <b>Section 2.7</b>.</li> </ul>
<p>The AEMR notes that clean water management upgrades have been completed in the reporting period. Works to stabilise several clean water diversion drains observed in the site inspection were not completed at the time of the inspection (Plate 1). There is no stabilised crossing and/or culvert where the clean water channel intersects the Back Tank access track (Plate 2). Clean water dam inlets, spillways and embankments were observed to display active erosion (Plate 3).</p> <p>Undertake necessary works to demonstrate that clean water diversion channels and dams are stabilised and maintain flows as 'clean' water. Provide a letter report to the DRE following completion of works, including photographic records.</p>	<ul style="list-style-type: none"> <li>• A Letter Report was supplied to DRE on 2 November 2015 addressing these concerns</li> <li>• Water management for this reporting period is addressed in <b>Section 2.8</b>.</li> </ul>
<p>All topsoil and subsoil stockpiles observed in the site visit are not constructed or maintained in accordance with the MOP (Plates 4 and 5). Deficiencies include poor management of stockpile heights and batter slopes, lack of stabilisation with native seeding, and inadequate erosion and sediment controls.</p> <p>Undertake an assessment of all stockpiles on site to identify volumes of topsoil and subsoil stockpiles by soil type, and an assessment of the suitability for rehabilitation of all stockpiled soil materials. Include an assessment of the stockpiled 'unsuitable' material excavated from the TSF footprint (refer to Plate 6).</p> <p>Implement soil stockpile management measures described in the MOP Section 3.2.4 and TARP Section 5.12.</p> <p>Provide a letter report to the DRE following completion of works including photographic records. In the event that the 'unsuitable' stockpile is considered unsuitable for rehabilitation advise the DRE of the proposed disposal options.</p>	<ul style="list-style-type: none"> <li>• A Letter Report was supplied to DRE on 2 November 2015 addressing these concerns</li> <li>• Soil management for this reporting period is addressed in <b>Section 2.7</b>.</li> </ul>
<b>Department of Planning and Environment, Feedback</b>	
<ul style="list-style-type: none"> <li>• Annual Reviews are not available on the company's website</li> </ul>	<ul style="list-style-type: none"> <li>• Previous Annual Environmental Management Reports / Annual Reviews were placed on the</li> </ul>

<ul style="list-style-type: none"> <li>• The Annual Review does not include: <ul style="list-style-type: none"> <li>○ Summary of all monitoring results required over the reporting period, including groundwater and noise, however results are available on the company’s website</li> <li>○ Summary of truck movements, also not available on the company’s website</li> <li>○ Comparison of the monitoring results, and complaints required over the reporting period with the monitoring results of previous years and the relevant predictions in the EA</li> <li>○ Identification of any trends in the monitoring data over the life of the project; and</li> <li>○ Identification of any discrepancies between the predicted and actual impacts of the project, and analysis of the potential cause of any significant discrepancies.</li> </ul> </li> </ul>	<p style="text-align: right;">Aurelia Metals website on 24 December 2015</p> <ul style="list-style-type: none"> <li>• Environmental monitoring pertaining to this reporting period has been included in <b>Section 3.</b></li> <li>• Truck movements were added to the Aurelia Metal’s website</li> <li>• All issues were addressed in an email supplied to the department on 24 December 2015.</li> </ul>
<p>The department requests that the next Annual Review be updated to:</p> <ul style="list-style-type: none"> <li>• Include a summary of all monitoring results required over the reporting, as required under condition 37 b) of Schedule 3 and condition 4 of Schedule 5;</li> <li>• Include a comparison of all monitoring results required over the reporting period with the monitoring results of previous years and the relevant predictions in the EA, as required under condition 4 (b) (iii) and (iv) of Schedule 5 of the approval;</li> <li>• Identify any trends in the monitoring data over the life of the project, as required under condition 4 (d) of schedule 5 of the approval; and</li> <li>• Include identification of any discrepancies between the predicted and actual impacts of the development, and analysis of the potential cause of any significant discrepancies, as required under condition 4(e) of Schedule 5 of the approval.</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental monitoring pertaining to this reporting period has been included in <b>Section 3.</b></li> </ul>

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## 2 Operations during the Reporting Period

### 2.1 Exploration

Refer to **Table 2.1.1** for details on exploration for the reporting period.

**Table 2.1.1 Exploration activities for the 2015-2016 reporting period.**

<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>• Re-logging of core from previous drilling activities;</li> <li>• 2x Reverse Circulation (RC) holes;</li> <li>• Two periods of underground drilling (October 2015 to January 2016 and April 2016 to May 2016) to further define the Resource and</li> <li>• Review and update of the Resource Model</li> </ul>
<b>Variations to the Mining Operations Plan (MOP)</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

### 2.2 Land Preparation

Refer to **Table 2.2.1** for details on land preparation for the reporting period.

**Table 2.2.1 Land preparation activities for the 2015-2016 reporting period.**

<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>• A risk Assessment was conducted on the Main Site Entrance road and bore-field access road and significant risks were identified relating to heavy and light vehicle interactions;</li> <li>• The risk assessment identified the need to improve line of site and install a heavy vehicle parking bay;</li> <li>• The Main Site Entrance road and bore-field access road was widened in places, visibility was improved and a heavy vehicle parking bay was installed;</li> <li>• Topsoil was removed and stock piled and felled timber was stored for rehabilitation activities at a later date.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

### 2.3 Construction

Construction projects were carried out throughout the reporting period in accordance with the MOP and PA requirements. Refer to **Table 2.3.1** for details on construction for the reporting period.

**Table 2.3.1 Construction activities for the 2015-2016 reporting period.**

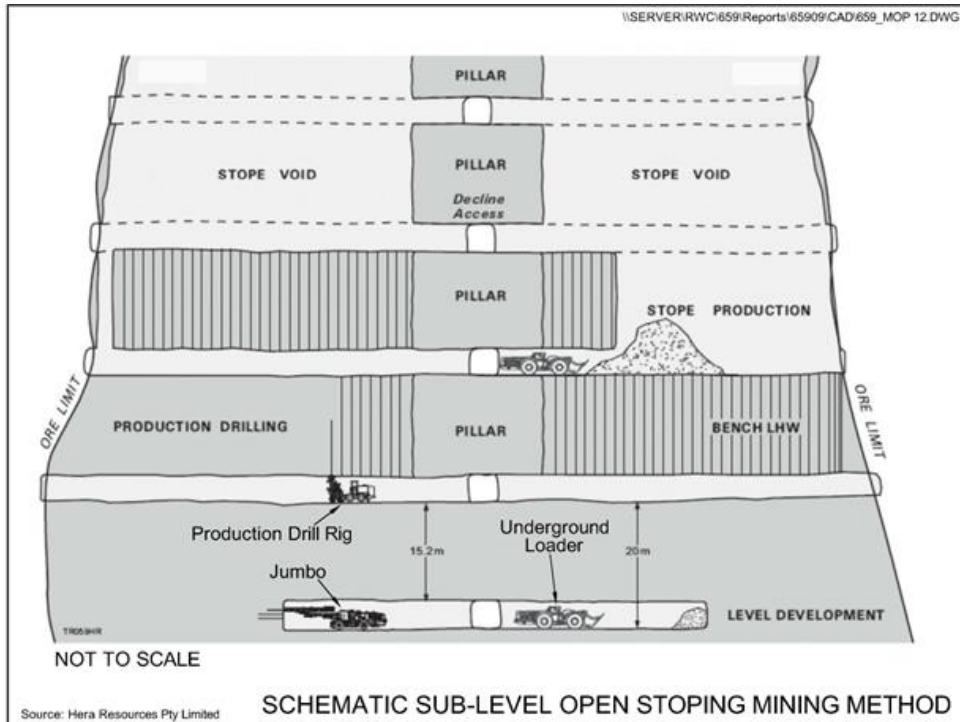
<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>• Additional monitoring and production bores were drilled;</li> <li>• Upgrades to water management infrastructure.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

### 2.4 Mining

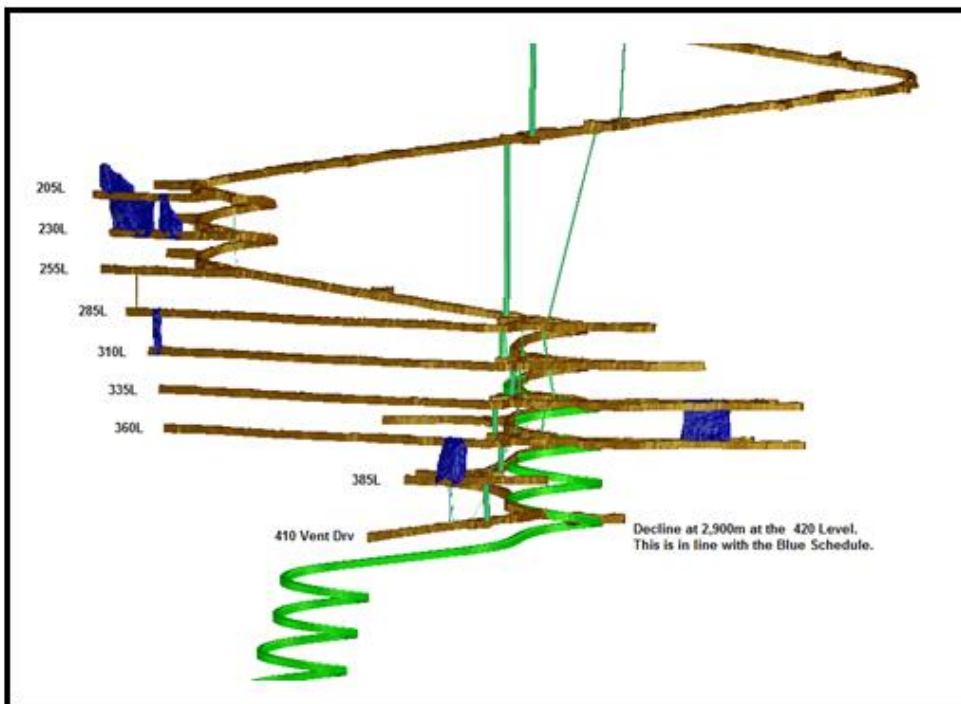
Mining for the period was undertaken using conventional sublevel open stope mining techniques. **Figure 2.4.1** presents a schematic overview of the mining method. Stope voids are backfilled with waste rock material from

concurrent underground development and if required, additional waste rock material is transported from the Waste Rock Emplacement Area (WREA) on the surface.

Mining activities conducted for the period were according to commitments made in the MOP. A summary of the material mined can be found in **Table 2.5.1**.



**Figure 2.4.1 Schematic of sub-level open stoping mining method**



**Figure 2.4.2 Underground Mining Development**

## 2.5 Mineral Processing

Details relating to mineral processing for the reporting period are summarised in **Table 2.5.1**. Mineral processing activities and variations to the MOP are presented in **Table 2.5.2**.

**Table 2.5.1 Mineral Processing details for the reporting period.**

	Actual Production		Cumulative Production	
	Start of Reporting Period	Material produced this Reporting Period	MOP estimate for reporting period	End of next reporting period (estimated)
	16-May-15	15-May-16	2016	2017
Processing waste (Tailings) (tonnes) (t)	179,267	271,128	320,000	650,000
Product				
Bulk Concentrate (t)	16,528	25,895	31,000	69,000
Gold Dore (ounces)	9,973	43,165	50,000	89,000
Silver Dore (ounces)	5,162	22,248	n/a	n/a
Pb Metal in concentrate (t)	4,022	7,045	n/a	n/a
Zn Metal in concentrate (t)	4,778	6,468	n/a	n/a
Cu Metal in concentrate (t)	311	602	n/a	n/a
Au Metal in concentrate (ounces)	4,059	5,285	n/a	n/a
Ag Metal in concentrate (ounces)	60,719	96,981	n/a	n/a

**Table 2.5.2 Mineral Processing activities for the 2015-2016 reporting period.**

<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>• 271,128 t of processing waste was produced;</li> <li>• 25,895 t of bulk lead/zinc concentrate was produced and;</li> <li>• 43.165 ounces (oz.) of gold Dore was produced.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP or PA 10_0191.
<b>Reason for the variation</b>	n/a

## 2.6 Waste Management

Waste management for the period was according to the commitments made in the MOP. Details pertaining to waste management are summarised in **Table 2.6.1**. Waste management activities in the reporting period are summarised in **Table 2.6.2**.

**Table 2.6.1 Waste Management during the reporting period**

Waste Material	Quantity
Office waste: <ul style="list-style-type: none"> <li>Batteries and;</li> <li>print cartridges</li> </ul>	As required
Raw sewerage	Treated by onsite sewerage treatment plants
Septic waste	21,000 L
General waste	7,182.5 m <sup>3</sup>
Paper/Cardboard	5,236 m <sup>3</sup>
Waste oil	45,000 L
Oily water	7,240 L
Oily rags	538 m <sup>3</sup>
Hazardous waste	5,408 m <sup>3</sup>
Waste grease (Hera Village)	4,000 L
Integrated Bulk Container (IBC) - Empty	378 units
Black iron	60.68 t
Manganese steel	15.97 t

**Table 2.6.2 Waste management activities for the 2015-2016 reporting period.**

<b>Activities for the period</b>	Materials are recycled where possible. All materials removed from site are done so by licensed contractors.
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

## 2.7 Ore and Product Stockpiles

Details pertaining to ore and product stockpiles is summarised in **Table 2.7.1**. Stockpile activities in the 2015-2016 period are summarised in **Table 2.7.2**.

	Annual Environmental Management Report	
	Author	J Thompson
	Reporting period	16 May 2015 to 15 May 2016

**Table 2.7.1 Stockpile details for the reporting period.**

	Actual Production (cubic metres)		Cumulative Production (cubic metres)	
	Start of Reporting Period (t) 16 May 2015	At End of Reporting Period (t) 15 May 2016	MOP Estimate for reporting period (t) 2016	End of next reporting (estimated) (t) 2017
<b>Topsoil stripped</b>	5,690	5,690	5,690	32,000
<b>Topsoil used/spread</b>	0	0	n/a	0
<b>Waste Rock</b>	117,654	258,844	11,000	49,000
<b>Ore</b>	109,130	286,050	350,000	720,000
<b>Tailings</b>	179,267	271,128	320,000	650,000
<b>Bulk Lead/Zinc Concentrate</b>	16,528	25,895	31,000	69,000

**Table 2.7.2 Ore and product stockpile activities for the reporting period.**

<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>• 258,844 t of waste rock was produced. 76,566 t was returned underground as fill and;</li> <li>• 286,050 t of ore was mined.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

## 2.8 Water Management

Water management for the period was according to the commitments made in the MOP. Further information regarding water management can be found in the *Hera Mine Water Management Plan*. Water management details for the reporting period are summarised in **Table 2.8.1** and water management activities are summarised in **Table 2.8.2**.

**Table 2.8.1 Water Management details for the reporting period.**

		Volumes held (metre cubed (m <sup>3</sup> ))			Preferred Operating Capacity
		Start of Reporting Period 16 May 2014	At End of Reporting Period 15 May 2015	Storage Capacity	
<b>Clean Water</b>	Back Tank	1,000	100	3,000	<10%
	Three Gates Tank	300	60	600	<10%
	Pete's Dam	0	60	600	<10%
<b>Total</b>		<b>1,300</b>		<b>4,200</b>	
<b>Dirty Water</b>	Sediment Basin 1	0	10	1,410	<10%
	Sediment Basin 2	0	0	1,410	<10%
	TSF Seepage				
	Collection Pond	0	180	1,800	<10%
<b>Total</b>		<b>0</b>		<b>4,620</b>	
<b>Contaminated water</b>	TSF	0	200	38,400	<10%
	Process Water Dam	5,000	4,250	5,300	~90%
	Settling Ponds	800	800	900	~90%
	PAF Leachate Dam	0	100	750	<10%
<b>Total</b>		<b>5,800</b>		<b>45,350</b>	

**Table 2.8.2 Water management activities for the reporting period.**


<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>Rock armouring placed in clean water drain;</li> <li>Culverts installed in drain crossings and;</li> <li>Installation of additional monitoring and production bores.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

## 2.9 Hazardous Material Management

Hazardous materials are managed according to the *Hazardous Materials Management Plan*. Details of the Company's hazardous material management during the period is summarised in **Table 2.9.1**.

**Table 2.9.1 Hazardous materials activities for the reporting period.**

<b>Activities for the period</b>	<ul style="list-style-type: none"> <li>Monthly site inspections to ensure all hazardous materials are stored in accordance with relevant legislation and regulations;</li> <li>Purchase and manufacture of a number of bunds suitable for storage of IBCs and drums;</li> <li>Explosives stored in fit-for-purpose magazine;</li> <li>Updating of the chemical register as required;</li> <li>Updating of Safety Data Sheets (SDS) as required;</li> <li>Training of staff and contractors during inductions or as required and;</li> <li>Licence to store hazardous and explosive materials was current for the period.</li> </ul>
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

	Annual Environmental Management Report	
	Author	J Thompson
	Reporting period	16 May 2015 to 15 May 2016

## 2.10 Other Infrastructure

Details of other infrastructure management activities for the reporting period are summarised in **Table 2.10.1**.

**Table 2.10.1 Other infrastructure management activities for the 2015-2016 reporting period.**

<b>Activities for the period</b>	Management of other infrastructure not mentioned elsewhere in this AEMR is conducted as required.
<b>Variations to the MOP</b>	No variations to the MOP.
<b>Reason for the variation</b>	n/a

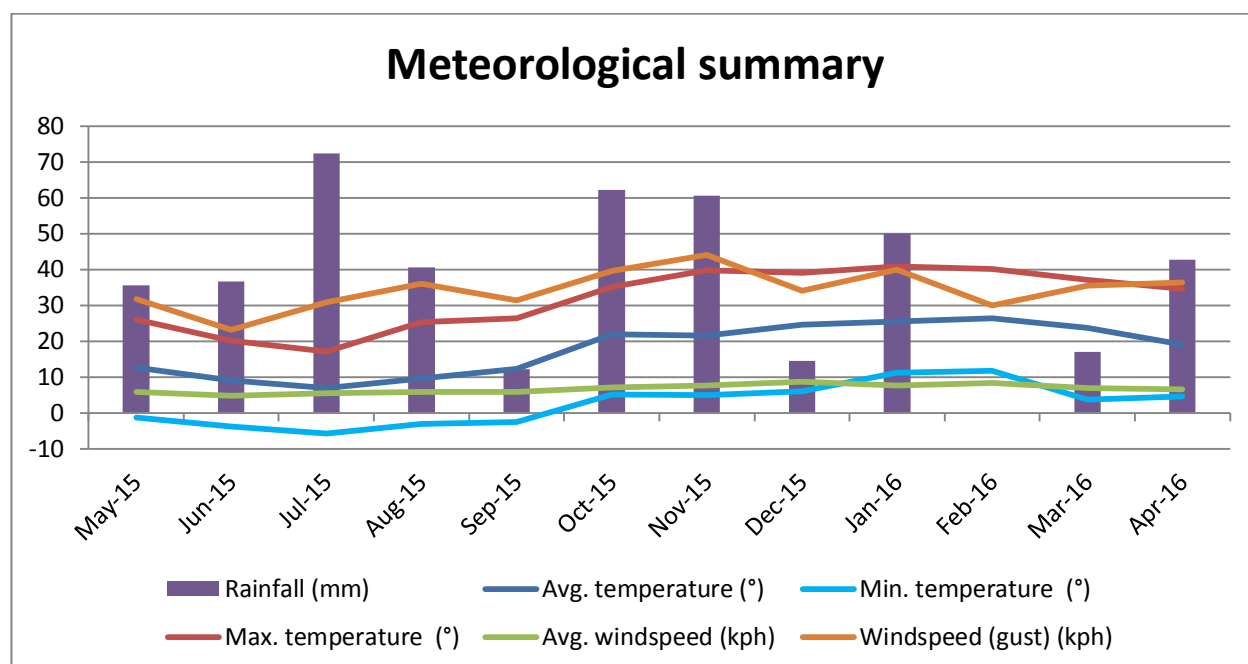
### 3 Environmental Management and Performance

#### 3.1 Air Pollution

Table 3.1.1 is a matrix of the environmental risks associated with the Hera Mine. Meteorological data has been summarising in Figure 3.1.1. Meteorological data must be considered as factors such as wind speed, rainfall and temperature can adversely impact environmental performance.

Table 3.1.1 Environmental risk identification matrix

	Exploration	Land preparation	Construction	Mine development	Maintenance roads	Waster rock management	Mineral processing facilities	Ore stockpiling	Tailings management	Water management	Hazardous materials	Sewerage	Rubbish disposal	Rehabilitation	Rehabilitated land
Air pollution, dust	M	M		M	M		M	M	L						
Erosion/ sediment minimisation									M						
Surface water pollution	M									M					
Ground water pollution															
Contaminated land									M	M					
Threatened flora protection	L									M				M	
Threatened fauna protection										M					
Weed control	L									L				L	
Operational noise	L														
Vibration															
Visual amenity	L												L		
Aboriginal heritage															
Natural heritage conservation															
Spontaneous combustion															
Bushfire															
Mine subsidence														M	
Hydrocarbon contamination	M									M					
Methane drainage															
Public safety	L														



**Figure 3.1.1 Summary of the meteorological conditions for the reporting period.**

Management of Air Pollution is in accordance with the *Air Quality and Greenhouse Gas Management Plan* and the MOP. Details pertaining to air pollution control activities for the reporting period are summarised in **Table 3.1.2**.

**Figure 3.1.2** is a map showing the location of the high volume air samplers (HVAS) and dust deposition gauges (DDG). **Figure 3.1.3** is a summary of the DDG results for the reporting period. **Figure 3.1.4** is a summary of the HVAS results for the same period. Total Suspended Particulates (TSP) and Particulate Matter that is less than 10 µg (PM<sup>10</sup>) are measured.

Reportable incidents for the reporting period are presented in **Table 3.1.3**.

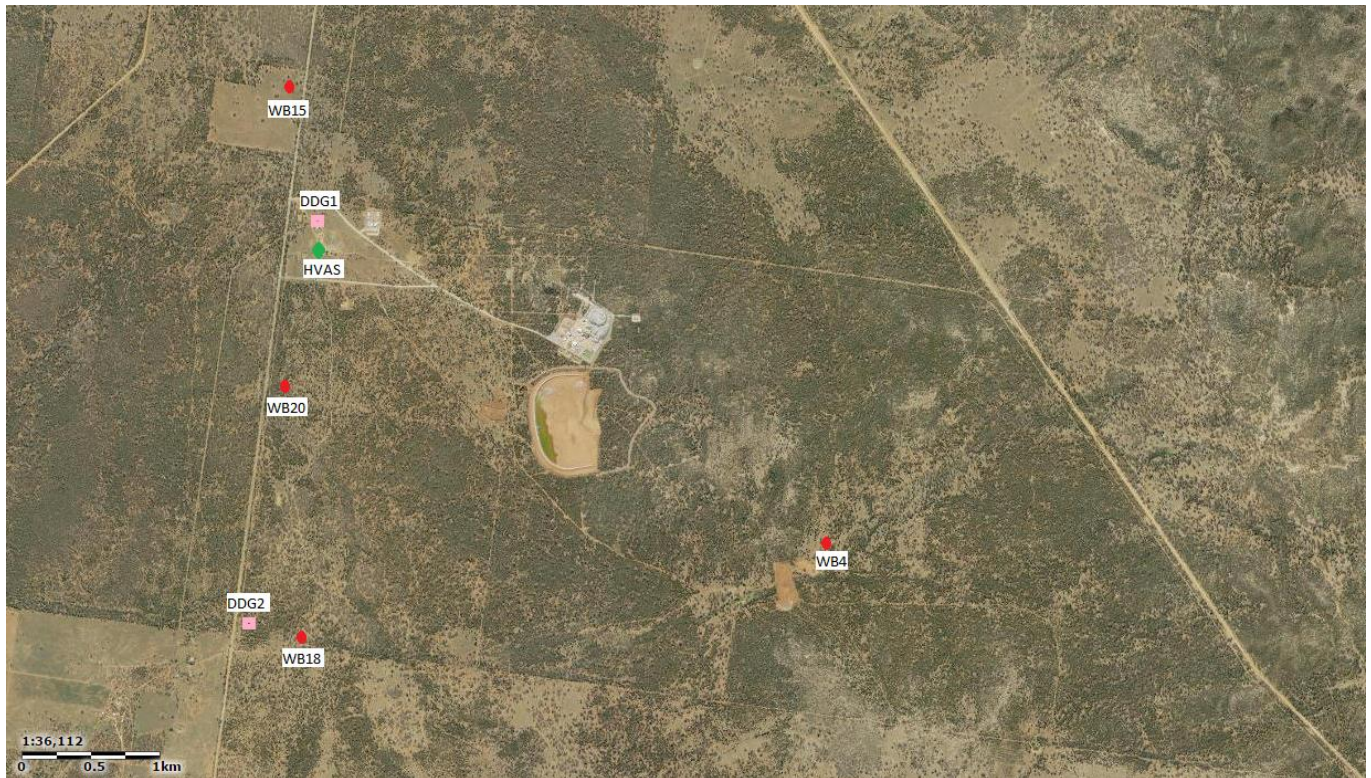
Monitoring and performance reports relating to air pollution are required by PA 10\_0191 and Environment Protection Licence (EPL) 20179. Results are published on the company website on a monthly basis.

**Table 3.1.2 Air pollution control activities for the reporting period.**

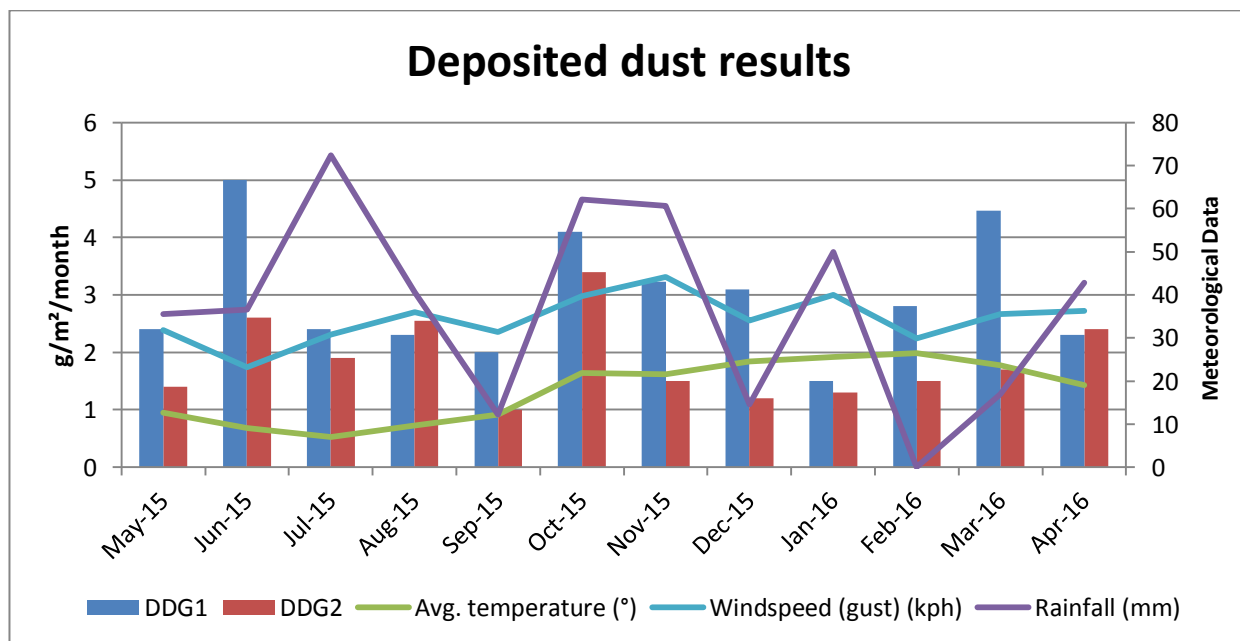
<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>Water trucks are operated on average of once per day (or as required) on unsealed roads and laydown areas to assist with dust control;</li> <li>Vehicles are washed upon returning to the surface from the decline or before leaving site and;</li> <li>Loaded vehicles are covered before leaving site.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

**Table 3.1.3 Reportable incidents for the reporting period.**

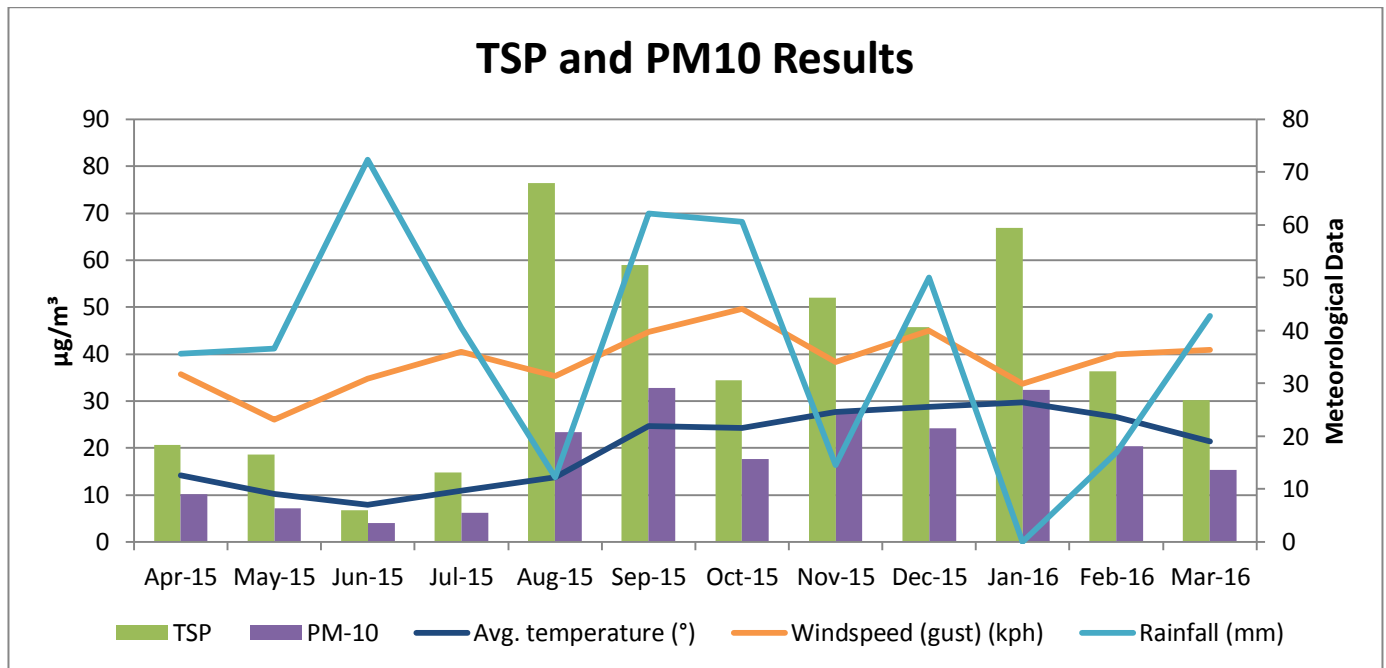
<b>Reportable Incidents</b>	<ul style="list-style-type: none"> <li>On 12 January 2016 an elevated PM<sup>10</sup> result of 68 micrograms per metres cubed (<math>\mu\text{g}/\text{m}^3</math>) was recorded by the HVAS</li> </ul>
<b>Reason for the incident</b>	<ul style="list-style-type: none"> <li>The incident was most likely caused by a regional dust storm in the area</li> </ul>
<b>Actions taken to prevent recurrence of the incident</b>	<ul style="list-style-type: none"> <li>The incident was reported to the EPA and DPE.</li> </ul>



**Figure 3.1.2 Location of monitoring points for DDG, HVAS and Groundwater.**

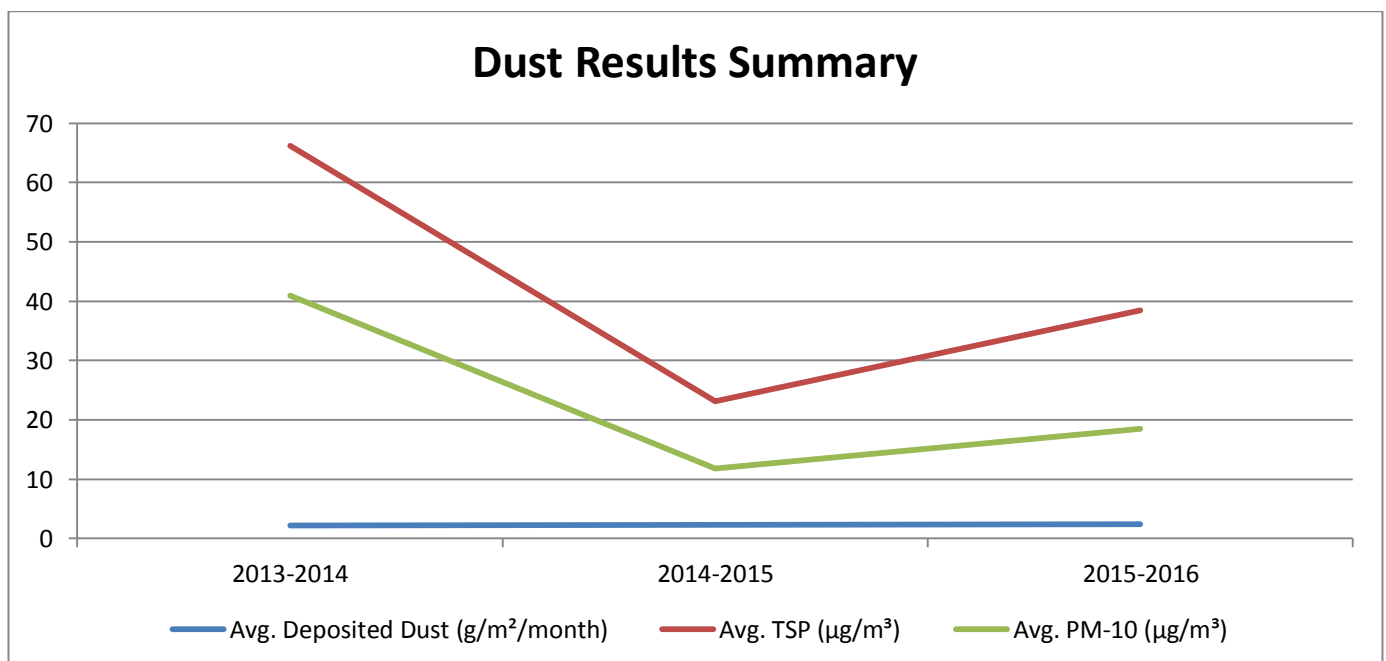


**Figure 3.1.3 Dust deposition gauge results for the reporting period.**



**Figure 3.1.4** HVAS results for the reporting period.

**Figure 3.1.5** is a summary of the dust results for the life of the project. The figure depicts average results for the annual reporting periods. Deposited dust has remained relatively unchanged while TSP and  $\text{PM}^{10}$  have reduced significantly. This would be expected as the mine has transitioned from the construction phase to the operational phase.



**Figure 3.1.5** Summary of dust results for the life of the Hera Mine

## 3.2 Erosion and Sediment

Erosion and sediment control for the reporting period was according to the commitments made in the *Hera Mine Water Management Plan* and MOP. Details pertaining to erosion and sediment control activities for the reporting

period are summarised in **Table 3.2.1**. Monitoring and performance reports relating to erosion and sediment control are not required by other licence or agency.

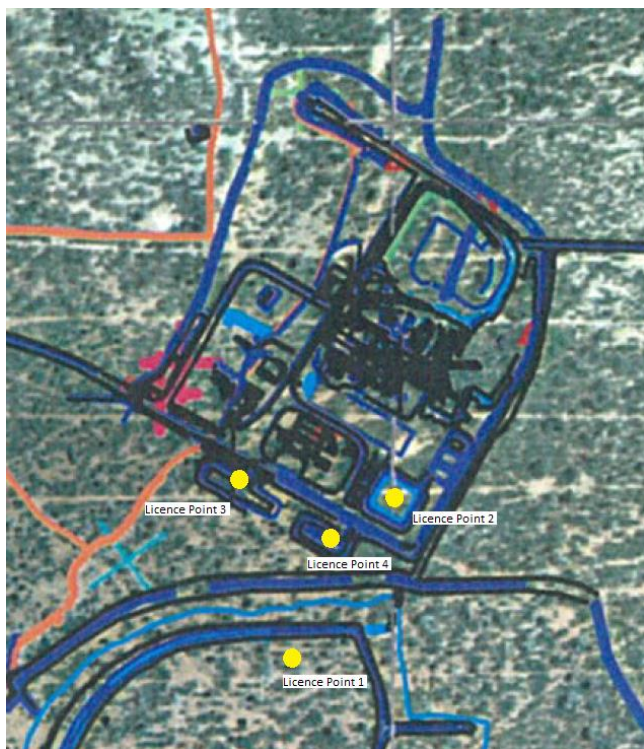
**Table 3.2.1 Erosion and sediment control activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>• Dig permits are required before any ground is broken;</li> <li>• Drill pads are rehabilitated;</li> <li>• Shaping stockpiles to reduce batter slope and length;</li> <li>• Inspections of all site water storages are conducted every two months or after heavy rainfall events (&gt; 25 mm in 24 hours) and;</li> <li>• The sediment basins are cleaned as required.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

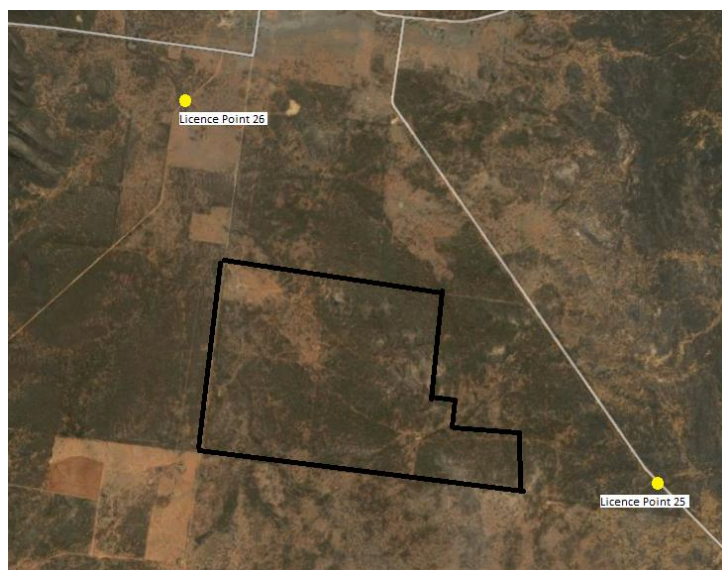
### 3.3 Surface water pollution

Surface water at Hera Mine is managed in accordance with the *Hera Mine Water Management Plan* and the MOP. Surface water monitoring results are published on the Company’s website. The results are also reported on an annual schedule to the EPA in the Annual Return.

**Figure 3.3.1** and **Figure 3.3.2** present maps of the licenced monitoring points as per the Environment Protection Licence (EPL) 20179. Surface water pollution activities during the reporting period are summarised in **Table 3.3.1**. Reportable incidents for the reporting period are presented in **Table 3.3.2**.



**Figure 3.3.1** Surface water monitoring locations as per the EPL.



**Figure 3.3.2 Upstream and downstream surface water monitoring locations as per the EPL.**

**Table 3.3.1 Surface water pollution activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>• All site runoff is directed to two Sediment dams;</li> <li>• All clean water is diverted to clean water dams around the 'Peak Property';</li> <li>• Two licensed monitoring points (Licence Point 25 and 26) upstream and downstream of the mine site are sampled opportunistically and;</li> <li>• The Company is currently in the final stages of updating the Water Management Plan.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

**Table 3.3.2 Reportable incidents for the reporting period.**

<b>Reportable Incidents</b>	<ul style="list-style-type: none"> <li>• Three elevated Weak Acid Dissociable (WAD) cyanide results were recorded in the process water dam</li> <li>• Eight elevated WAD cyanide results were recorded in the Tailings Storage Facility (TSF).</li> <li>• Two discharges from Licence Point 3 exceeded a number of water quality parameters identified in the EPL 20179</li> </ul>
<b>Reason for the incident</b>	<ul style="list-style-type: none"> <li>• The high WAD cyanide results were caused by failure of the detoxification process. The process will be adjusted so that discharge to process water dam cannot occur unless the decontamination circuit is active. The exceedances were reported to the EPA.</li> <li>• The discharges from Licence Point 3 were unplanned and caused by heavy rainfall.</li> </ul>
<b>Actions taken to prevent recurrence of the incident</b>	<ul style="list-style-type: none"> <li>• The detoxification process in the Process Plant has been automated. Since the implementation of the changes, water can no longer discharge to the process water dam or TSF if the detoxification process fails;</li> <li>• The company is currently exploring options for the Sediment Basin that will allow for containment of a 1 in 100, 72 hour flood event;</li> <li>• The incidents were reported to the EPA.</li> </ul>

**Table 3.3.3** is a summary of the water monitoring results required by PA 10\_0191. Monitoring and performance reports relating to air pollution are required by PA 10\_0191 and EPL 20179. Results are published on the company website on a monthly basis.

**Table 3.3.3 Summary of water quality monitoring results required by PA 10\_0191.**

Surface Water Monitoring Summary			
WAD Cyanide (mg/L)			
	Minimum	Mean	Maximum
Process Water Dam	0	2.06	50
Tailings Storage Facility	0	1.9	100

### 3.4 Groundwater pollution

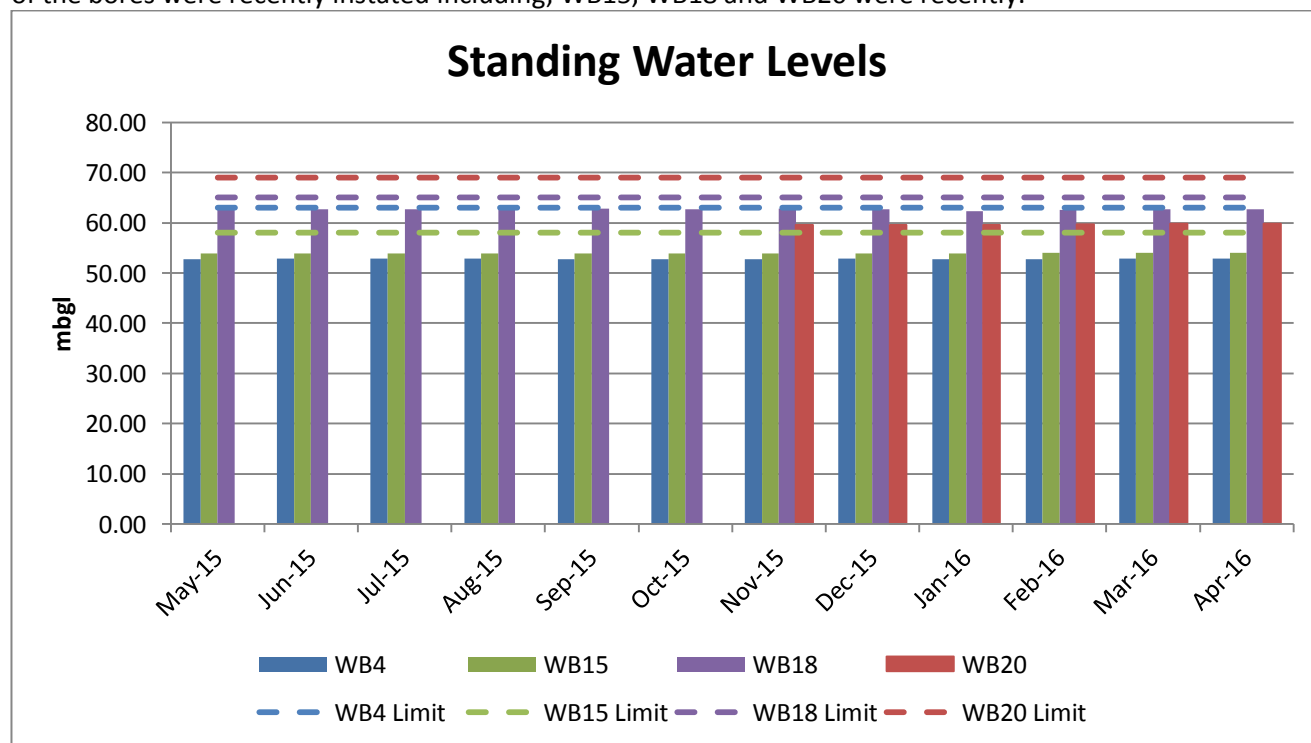
Groundwater at Hera Mine is managed in accordance with the *Hera Mine Water Management Plan* and the MOP. Groundwater monitoring results are published on the Company's website. The results are also reported on an annual schedule to the EPA in the Annual Return. **Figure 3.3.1** presents a map of the monitoring points as per the EPL. Groundwater pollution activities during the reporting period are summarised in **Table 3.4.1**.

A summary of monitoring and performance reports required by other licenses or agencies is supplied in **Table 3.4.2**. No reportable incidents were recorded for the reporting period.

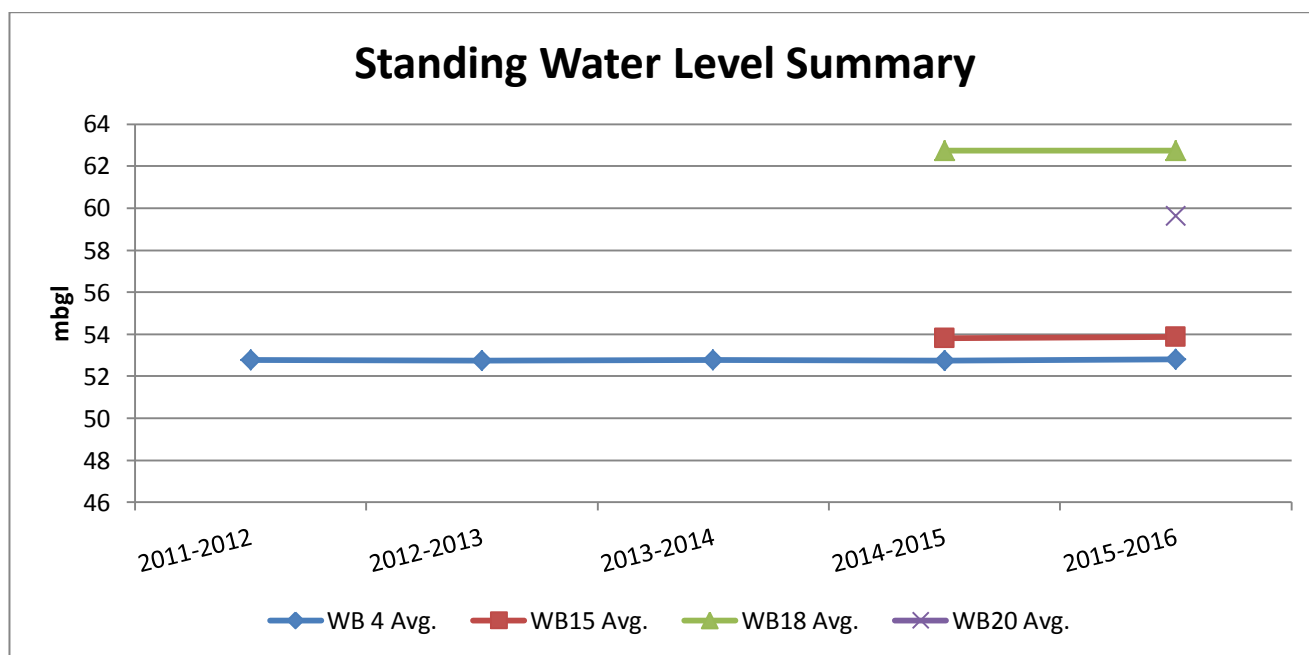
**Table 3.4.1 Groundwater pollution activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>Monitoring bores surrounding TSF are monitored on a regular basis to assess for potential seepage;</li> <li>Monitoring bores around site are monitor on a regular basis to assess for potential impacts to neighboring groundwater supplies;</li> <li>A number of new monitoring bores were installed, including WB20 and;</li> <li>A hydrogeologist was contracted to determine appropriate standing water level limits that could be applied to monitoring bores to allow for accurate determination of impacts on neighbouring groundwater supplies.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

Average monthly standing water levels for the licenced monitoring bores are presented in **Figure 3.4.1**. The figure summarises the metres below ground level (mbgl) for each month in the reporting period and the relevant limit for each bore. **Table 3.4.2** is a summary of the standing water level results for the life of the Hera Mine. A number of the bores were recently instated including; WB15, WB18 and WB20 were recently.



**Figure 3.4.1 Standing water level results**



**Figure 3.4.2 Summary of standing water levels for the life of the Hera Mine**

**Table 3.4.2 Summary of monitoring and performance reports required by other licenses or agencies.**

Licence or agency	Requirements
EPL 20179	<ul style="list-style-type: none"> <li>Licence points must be sampled on a quarterly basis for standing water level and a range of water quality analytes;</li> <li>The monitoring results are reported in the Annual Return for the reporting period (18 March 2014 to 17 March 2015) and;</li> <li>Results are published on the company website.</li> </ul>
Water Access Licence (WAL) 28773 and 30298	<ul style="list-style-type: none"> <li>Licence points must be sampled on a monthly basis for standing water level and for pH and electrical conductivity;</li> <li>The Company is licensed to remove 540 mega-litres (ML) and 4 ML according to WAL 28773 and 30298 respectively and;</li> <li>Total groundwater removed from underground sources is reported at the end of financial year.</li> </ul>

pH and electrical conductivity for the licenced monitoring bores is presented in **Figure 3.4.2** and **Figure 3.4.3**. No data was collected in February or March 2016 as the equipment was damaged and samples were unable to be taken.

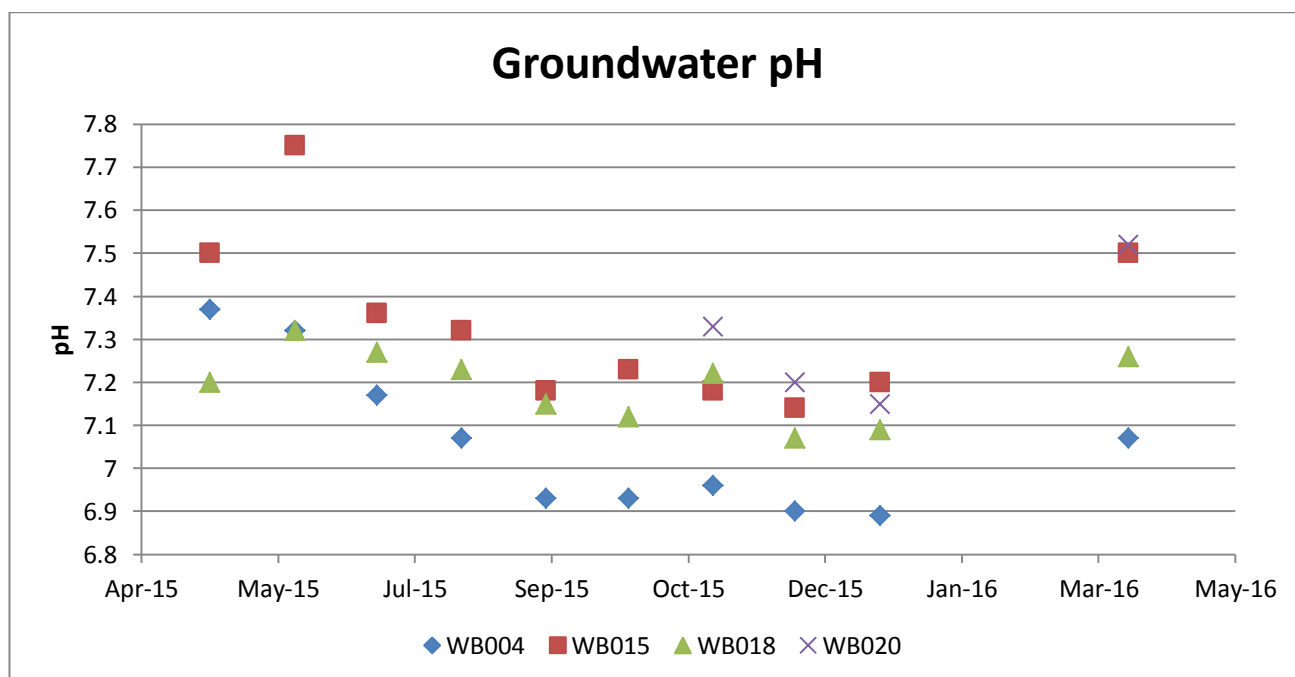


Figure 3.4.3 Summary of pH for the licenced groundwater monitoring bores

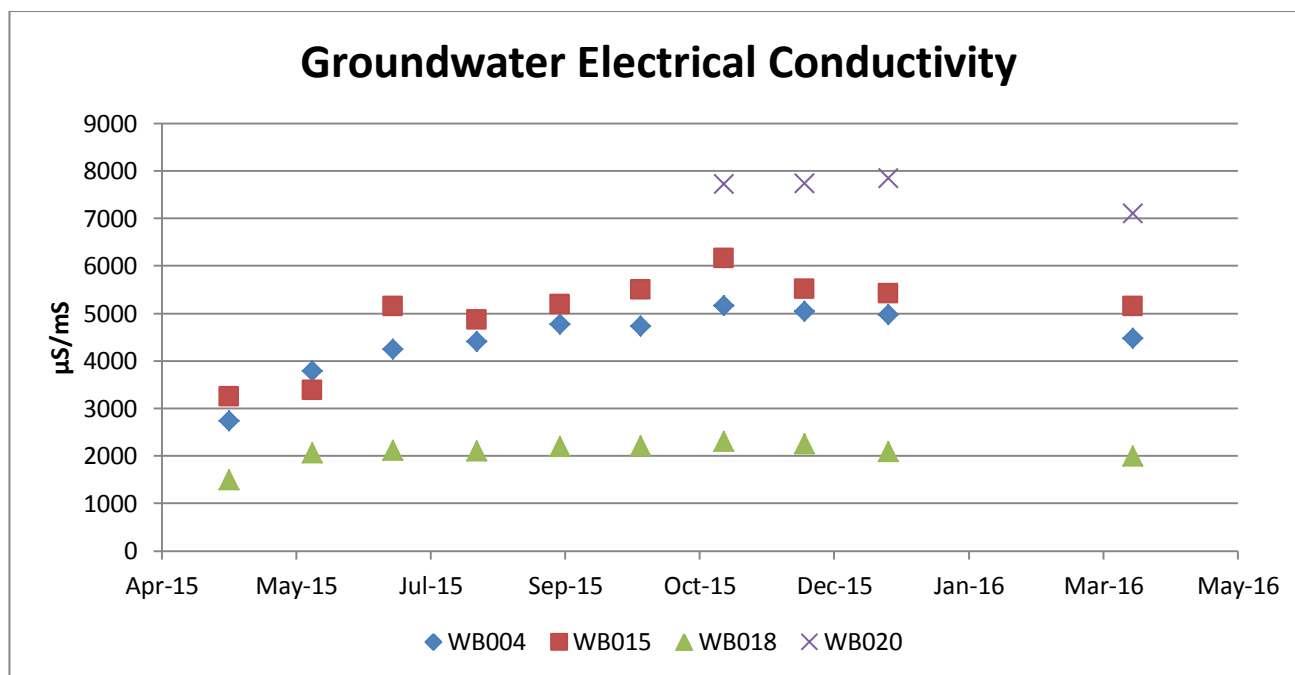


Figure 3.4.4 Summary of electrical conductivity for the licenced groundwater monitoring bores

Table 3.4.3 is a summary of the groundwater extracted from the production bores for the reporting period. A total of 264.80 ML of groundwater was extracted from the bores, the company is licenced to remove 540 ML. Approximately 45% of total groundwater was used in the reverse osmosis plant in the production of potable water; approximately 40% was pumped down the underground decline for use in water sprays, drilling and underground activities; approximately 5% was used in surface dust suppression and approximately 10% was utilised in the Processing Plant predominately in gland water for pumps.

**Table 3.4.3 Summary of groundwater extracted from production bores for the reporting period**

Date	Decline (ML)	Back Bore (ML)	WB10 (ML)	House Bore (ML)	WB11/21 (ML)	WB8 (ML)	WB24 (ML)	WB25 (ML)
May-15	11.07	0.52	0	0.55*	4.58	5.13	0	0
Jun-15	10.28	0.00	0	0.55*	4.30	5.53	0	0
Jul-15	10.88	0.00	0	0.55*	4.48	6.26	0	0
Aug-15	10.59	0.50	0	0.55*	5.30	5.27	0	0
Sep-15	9.54	0.97	0	0.55*	4.95	5.36	0	0
Oct-15	9.14	5.07	0	0.55*	4.13	6.39	0	0
Nov-15	9.86	7.09	0	0.55*	1.02	4.45	0	0
Dec-15	10.01	0.30	0	0.55*	3.81	5.69	0	0
Jan-16	9.52	0.34	0	0.55*	2.91	4.70	0	0
Feb-16	8.56	0.40	0	0.55*	3.91	6.55	0	1.21
Mar-16	8.44	0.21	0	0.55*	2.77	5.11	0	9.45
Apr-16	8.69	0.01	0	0.55*	2.34	3.78	1.73	5.14
<b>Total</b>	116.60	15.41	0	6.56	44.49	64.21	1.73	15.80

\*Estimated groundwater usage per month

### 3.5 Contaminated polluted land

Contaminated polluted land at Hera Mine is managed in accordance with the *Hazardous Materials Management Plan* and the MOP. Contaminated polluted land activities during the reporting period are summarised in **Table 3.5.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.5.1 Contaminated polluted land activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>Incidents leading to the potential contamination of land onsite are report under the Company's incident reporting framework. All incidents are investigated to determine the root cause and facilitate process improvements and;</li> <li>Pollution incidents of land causing actual or potential material harm to the environment are reported to the relevant external regulators.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.6 Threatened Flora

Threatened flora at Hera Mine is managed in accordance with the *Biodiversity Management Plan* and the MOP. Threatened flora activities during the reporting period are summarised in **Table 3.6.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.6.1 Threatened flora activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>A flora and fauna monitoring survey was completed in January 2016 (<b>Appendix 7.1</b>)</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.7 Threatened Fauna

Threatened fauna at Hera Mine is managed in accordance with the *Biodiversity Management Plan* and the MOP. Threatened fauna activities during the reporting period are summarised in **Table 3.7.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.7.1 Threatened flora activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>A flora and fauna monitoring survey was completed in January 2016(<b>Appendix 7.1</b>);</li> <li>Goats are removed from the property as required;</li> <li>A cat trap is set as required;</li> <li>Fox baiting was conducted onsite during January 2016 and;</li> <li>Rabbit baiting and/or warren ripping is conducted onsite as required. No rabbit control was conducted onsite for this reporting period.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.8 Weeds

Weeds at Hera Mine are managed in accordance with the *Biodiversity Management Plan*. Weed management activities during the reporting period are summarised in **Table 3.8.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.8.1 Weed management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>No additional noxious weeds other than reported in the <i>Biodiversity Management Plan</i> were observed ;</li> <li>Vehicles are washed down on a regular basis and;</li> <li>Weed spraying is conducted as required. Weeds targeted were thistle, Bathurst Burr and Galvanised Burr.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.9 Blasting

Blast activities at Hera Mine are managed in accordance with the *Blast Management Plan*. Blast management activities during the reporting period are summarised in **Table 3.9.1**. A summary of the blast data is presented in **Table 3.9.2**. No reportable incidents were recorded for the reporting period. Monitoring or performance reports required by other licence or agency are summarised in **Table 3.9.3**.

**Table 3.9.1 Blast activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>Blast vibration and overpressure are recorded for all blasting;</li> <li>406 blasts were initiated underground. All blasts were within licence conditions and;</li> <li>The company is in the final stages of developing Blast Site Laws for the Hera Mine to reduce exceedances by predicting Peak Vector Sums from blast characteristics.</li> </ul>
<b>Variations to the control strategies</b>	<ul style="list-style-type: none"> <li>No variations from the control strategies</li> </ul>
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

**Table 3.9.2 Summary of blasting for the reporting period.**

Blast Monitoring Summary			
	Minimum	Mean	Maximum
Vibration (millimetres per second (mm/s))	<0.350	0.608	4.985
Overpressure (decibels) (dB)	<88	93.51	112

**Table 3.9.3 Summary of monitoring and performance reports required by other licenses or agencies.**

Licence or agency	Requirements
EPL 20179	<ul style="list-style-type: none"> <li>Ground vibration and overpressure must be monitored for all blasting;</li> <li>Exceedances are reported to the EPA and in the Annual Return and;</li> <li>All data must be published on the AMI website.</li> </ul>

**Figure 3.9.1** is a summary of the blast vibration for the life of the Hera Mine. The blast vibration has increased progressively since the inception of the project. However, to date all blasting has been compliant. The increasing trend would be expected as the project has transitioned from an underground development focus to an underground production focus (i.e. production blasting typically has greater maximum instantaneous charges than development blasting).

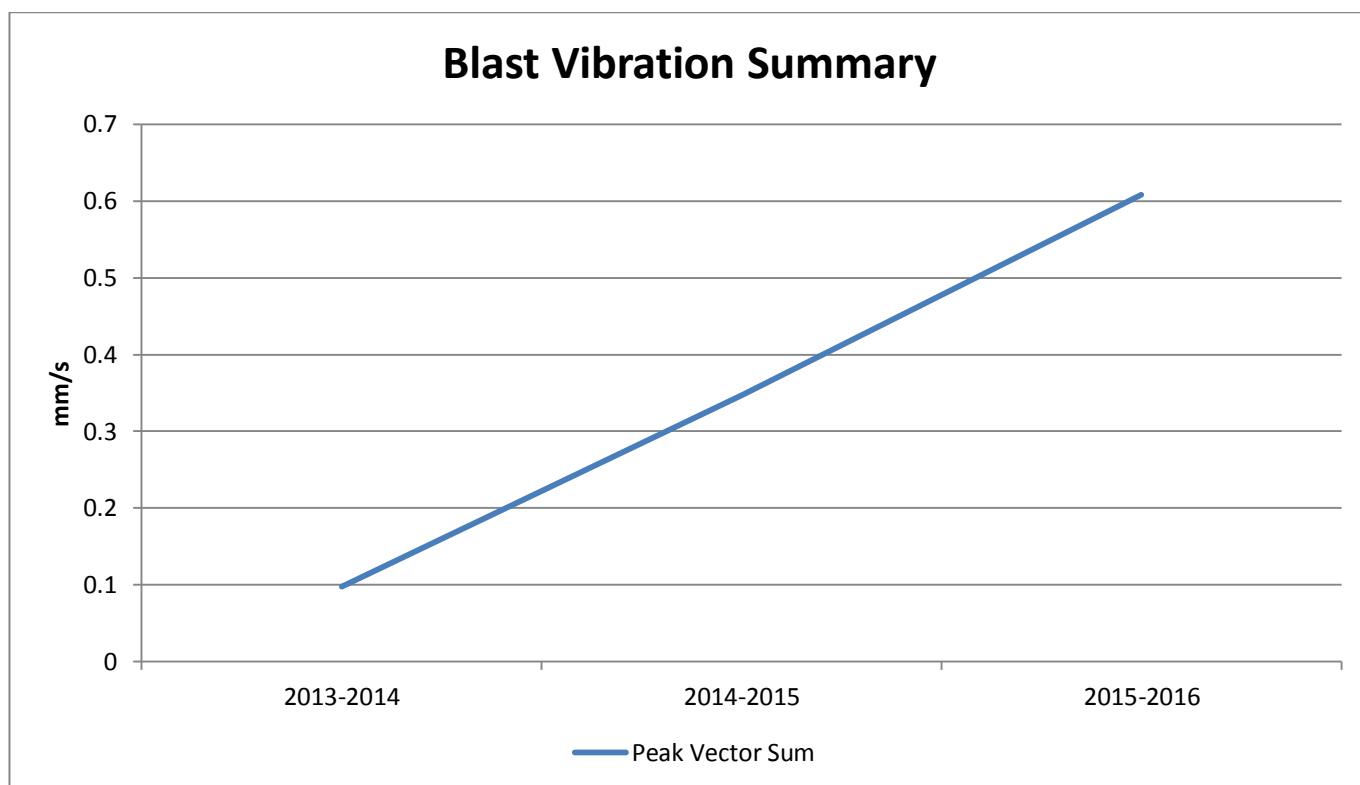


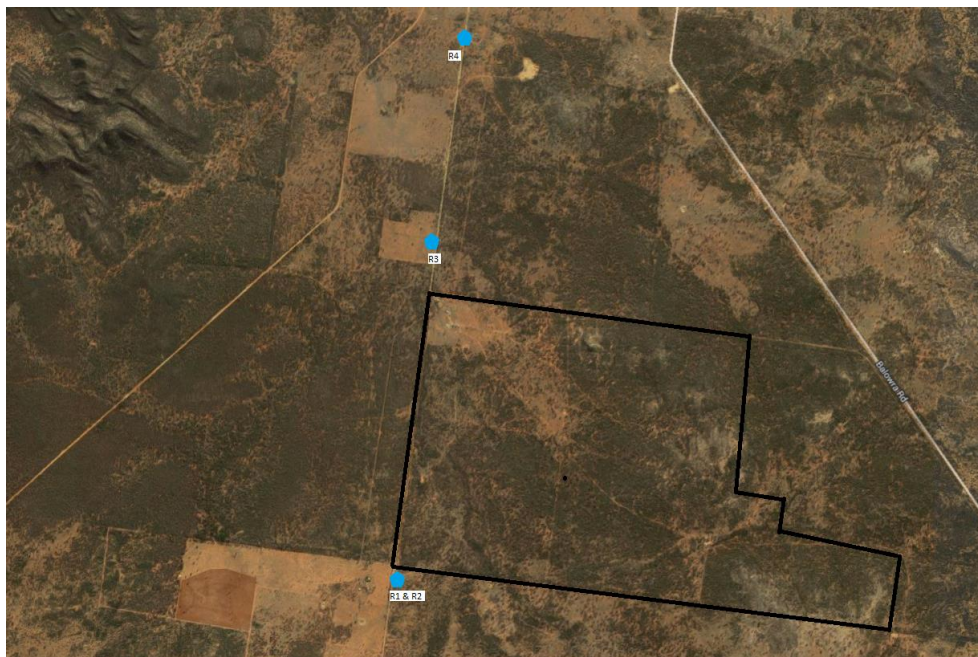
Figure 3.9.1 Summary of blast vibration for the life of the Hera Mine

### 3.10 Operational Noise

Operational noise at Hera Mine is managed in accordance with the *Noise Management Plan*. Operational noise management activities during the reporting period are summarised in **Table 3.10.1**. **Figure 3.10.1** is a map of the monitoring points as per the EPL. No reportable incidents were recorded for the reporting period. Monitoring or performance reports required by other licence or agency are summarised in **Table 3.10.2**.

**Table 3.10.1 Operational noise management activities for the reporting period.**

<p><b>Control strategies for the reporting period</b></p>	<ul style="list-style-type: none"> <li>• Operational noise is reduced where possible by applying strategies such as               <ul style="list-style-type: none"> <li>○ Utilising natural and artificial noise barriers (e.g. hay bales around exploration drill rigs);</li> <li>○ Operation of individual plant/equipment;</li> <li>○ Planning ‘noisy’ operations for suitable periods of the day;</li> <li>○ Fitting plant/equipment with noise abatement devices where possible and;</li> <li>○ Sourcing low frequency alarms.</li> </ul> </li> <li>• Noise monitoring is conducted near the closest neighboring properties (<b>Figure 3.10.1</b>) on a monthly basis during day, evening and night time periods;</li> <li>• The Company currently has an ongoing Noise Agreement with monitoring point R3.</li> </ul>
<p><b>Variations to the control strategies</b></p>	<p>No variations to the control strategies</p>
<p><b>Reason for the variation</b></p>	<p>n/a</p>
<p><b>Notification supplied to relevant agency of any variations?</b></p>	<p>n/a</p>



**Figure 3.10.1** Location of noise monitoring points surrounding the Hera Mine.

**Table 3.10.2** Summary of monitoring and performance reports required by other licenses or agencies.

Licence or agency	Requirements
EPL 20179	<ul style="list-style-type: none"> <li>Operational noise is to be monitored at neighboring properties</li> <li>Exceedances are reported to the EPA and in the Annual Return and;</li> <li>All data must be published on the AMI website.</li> </ul>

**Figure 3.10.2** is a summary of the noise monitoring results for the life of the Hera Mine. The results indicate that noise generated around the Hera Mine has remained relatively unchanged. The Hera Mine has an ongoing noise agreement with its nearest neighbour who is located at R3. No exceedances have been reported in this reporting period.

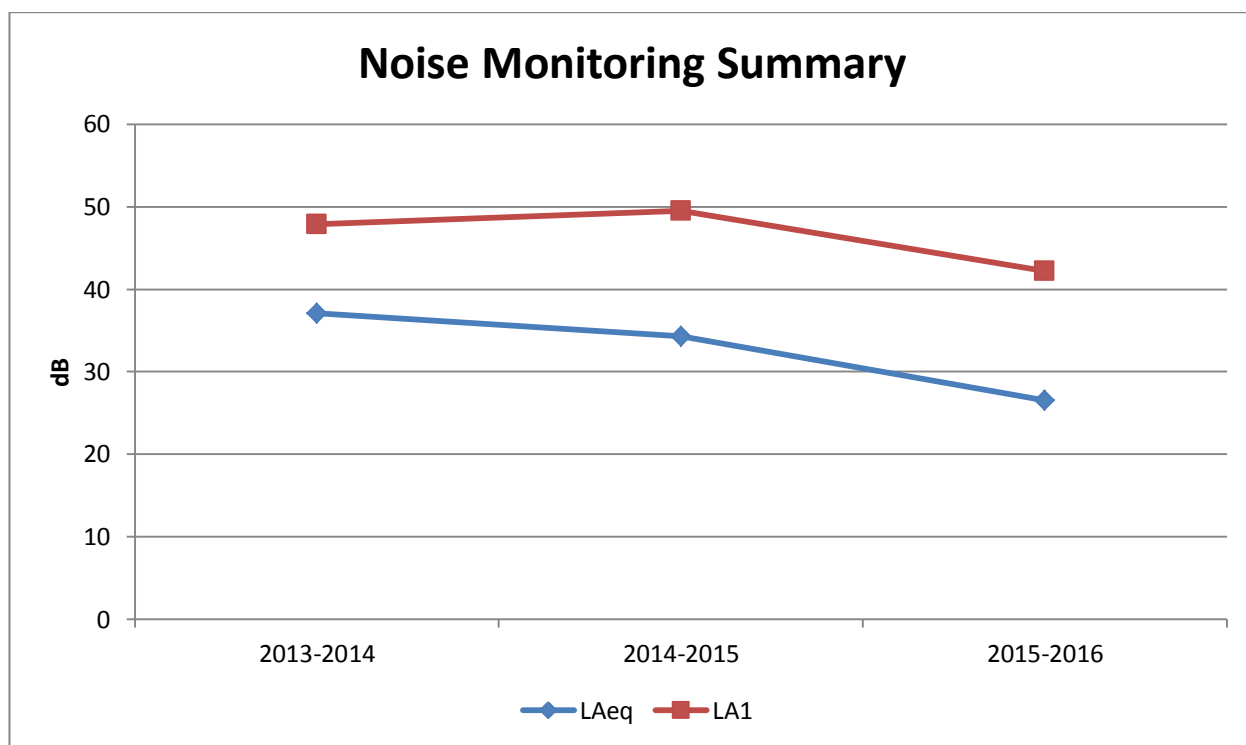


Figure 3.10.2 Noise monitoring results for the life of the Hera Mine

### 3.11 Visual, Stray Light

Visual, stray light at Hera Mine is managed as required. Visual, stray light management activities during the reporting period are summarised in **Table 3.11.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.11.1 Visual, stray light management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>Natural screening (e.g. trees) are not removed unless required;</li> <li>Physical barriers and distance between the Hera Mine and potential sensitive receptors and;</li> <li>Placement, intensity, illumination direction to reduce nuisance light.</li> </ul>
<b>Variations to the control strategies</b>	No variations to the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.12 Aboriginal Heritage

Aboriginal heritage at Hera Mine is managed in accordance with the *Aboriginal Cultural Heritage Management Plan*. Aboriginal heritage management activities during the reporting period are summarised in **Table 3.12.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.12.1 Aboriginal heritage management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>No sites or objects of Aboriginal heritage significance have been identified at the Hera Mine;</li> <li>All employees and contractors to Hera Mine receive training during site inductions and;</li> <li>Dig permits are required when breaking ground and part of this process involves inspecting the site for heritage items.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.13 Natural Heritage

Natural heritage at Hera Mine is managed as required. Natural heritage management activities during the reporting period are summarised in **Table 3.13.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.13.1 Natural Heritage activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>No sites or objects of natural heritage significance have been identified at the Hera Mine;</li> <li>All employees and contractors to Hera Mine receive training during site inductions and;</li> <li>Dig permits are required when breaking ground and part of this process involves inspecting the site for heritage items.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.14 Spontaneous Combustion

Environmental management of spontaneous combustion, including control strategies and variations are summarised in **Table 3.14.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.14.1 Spontaneous combustion management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<p>Hera Mine is a hard rock metalliferous mine and not prone to spontaneous combustion.</p> <p>Some chemicals have a chance of spontaneous combustion. Control strategies implemented to manage the risk includes:</p> <ul style="list-style-type: none"> <li>• Chemicals that are spontaneously combustible are stored tightly in containers in cool, dry, well ventilated areas, removed from oxidising agents, acids, direct sunlight, heat or ignition sources;</li> <li>• Containers are labelled with SDS readily available;</li> <li>• Containers are protected from physical damage;</li> <li>• Regular checks for leaks or spills are conducted and;</li> <li>• Fire protection systems are readily available.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.15 Bushfire

Environmental management of bushfire, including control strategies and variations are summarised in **Table 3.15.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.15.1 Bushfire management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<p>Risk of bushfire is managed on site through implementation of a range of procedures and measures, including:</p> <ul style="list-style-type: none"> <li>• Fire breaks around infrastructure and boundary fencing;</li> <li>• Hot work permit procedure for any work involving heat and/or naked flame;</li> <li>• Job Safety and Environment Analysis procedure to assess hazards in each step of a work, to establish suitable controls to manage identified hazards and appropriate tools, equipment, permits, PPE and reference documents required;</li> <li>• Correct and safe storage of flammable and combustible fuels, chemicals and materials;</li> <li>• Site-wide restriction on smoking and carrying of flame initiating devices;</li> <li>• Deployment of suitably trained and experienced Site Emergency Response Team and;</li> <li>• Established links and protocols with nearby Cobar emergency response teams.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.16 Mine Subsidence

Environmental management of mine subsidence, including control strategies and variations are summarised in **Table 3.16.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.16.1 Mine subsidence management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	Hera Mine is an underground, hard rock, metalliferous mine in relatively stable ground with no record of mine subsidence.
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.17 Hydrocarbon contamination

Environmental management of hydrocarbon contamination, including control strategies and variations are summarised in **Table 3.17.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.17.1 Hydrocarbon contamination management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>• Bunding of hydrocarbon storages;</li> <li>• Runoff from wash bays is captured and treated;</li> <li>• Provision of spill kits for containment and clean-up and;</li> <li>• Inspections of hydrocarbon storages.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.18 Methane drainage/ventilation

Environmental management of methane drainage/ventilation, including control strategies and variations are summarised in **Table 3.18.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.18.1 Spontaneous combustion management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	Hera Mine is a hard rock metalliferous mine and not prone to methane drainage/ventilation issues.
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.19 Public Safety

Environmental management of public safety, including control strategies and variations are summarised in **Table 3.19.1**. No reportable incidents were recorded for the reporting period. No other monitoring or performance reports are required by other licence or agency.

**Table 3.19.1 Spontaneous combustion management activities for the reporting period.**

<b>Control strategies for the reporting period</b>	<ul style="list-style-type: none"> <li>• Perimeter fencing with gated entrances and warning signage as barrier to prevent Public access to mine site;</li> <li>• Provision of swipe card access for main entrance to mine;</li> <li>• Entry restriction to all persons under the age of 16 years;</li> <li>• Mill Control Centre manned 24 hours a day, seven days a week;</li> <li>• Regular inspections of perimeter fencing and;</li> <li>• Induction procedures for visitors to site.</li> </ul>
<b>Variations to the control strategies</b>	No variations from the control strategies.
<b>Reason for the variation</b>	n/a
<b>Notification supplied to relevant agency of any variations?</b>	n/a

### 3.20 Other issues and risks

#### 3.20.1 Concentrate Transport

Transport of concentrate is managed in accordance with the *Traffic Management Plan*. Reportable incidents for the period are summarised in **Table 3.20.1**. Monitoring of concentrate transport is required according to PA 10\_0191 and the data is published on the company website on a monthly basis.

**Table 3.20.1 Reportable incidents associated with concentrate transport for the reporting period**

<b>Reportable Incidents</b>	<ul style="list-style-type: none"> <li>• Four concentrate transport trucks left the Hera Mine outside of daylight hours and;</li> <li>• More than two concentrate transport trucks average over a calendar month, left the Hera Mine in August 2015</li> </ul>
<b>Reason for the incident</b>	<ul style="list-style-type: none"> <li>• Misinterpretation of the PA 10_0191 conditions associated with transport of concentrate</li> </ul>
<b>Actions taken to prevent recurrence of the incident</b>	<ul style="list-style-type: none"> <li>• The incident was reported to the DPE and Roads and Maritime Service (RMS) on 4 August 2016.</li> </ul>

**Table 3.20.2** is a summary of the concentrate truck movements travelling from the Hera Mine to the Hermidale rail siding, averaged over a calendar month.

**Table 3.20.2 Summary of concentrate truck movements**

Date	Concentrate (t)	Avg. vehicle movements per day
May-15	1553.41	1.03
Jun-15	2666.92	1.87
Jul-15	2881.55	1.68
Aug-15	3583.71	2.35
Sep-15	1877.87	1.27
Oct-15	1964.55	1.32
Nov-15	2156.80	1.50
Dec-15	2511.08	1.71
Jan-16	1356.76	0.90
Feb-16	1675.84	1.21
Mar-16	2477.48	1.68
Apr-16	1687.78	1.17

No other issues or risks to report.

## 4 Community Relations

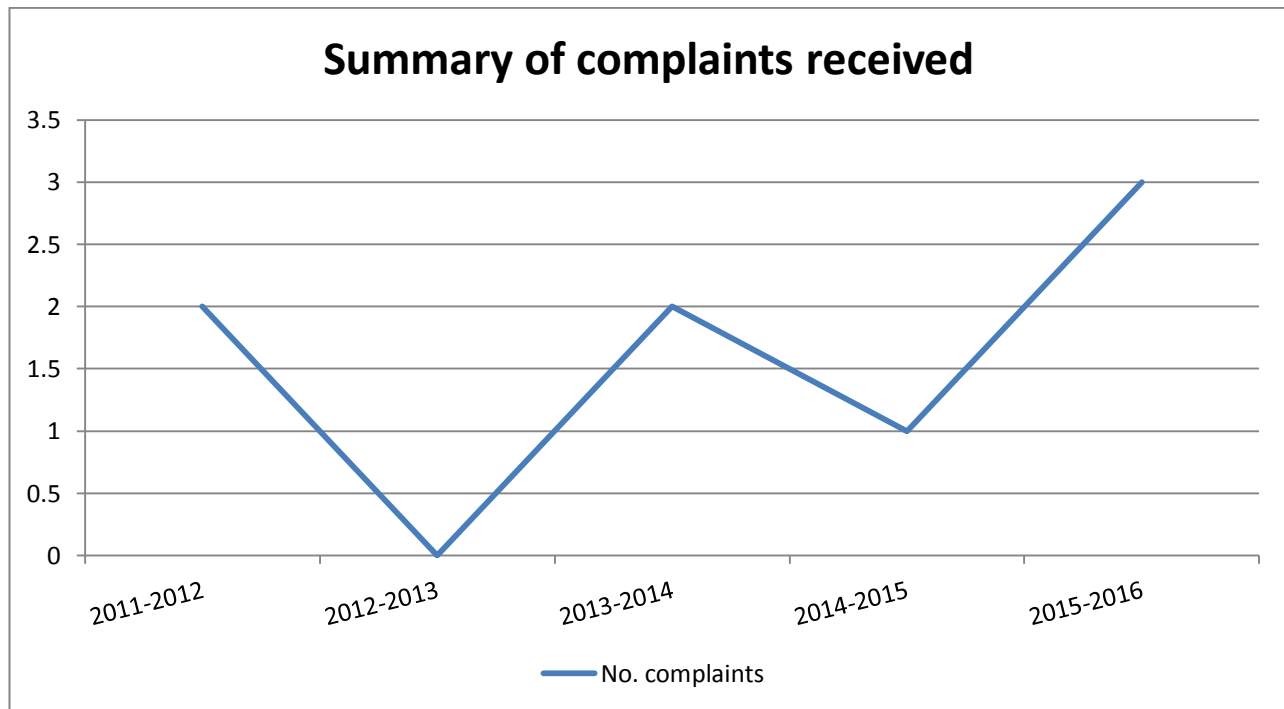
### 4.1 Environmental Complaints

A summary of complaints for the reporting period is provided in **Table 4.1.1**.

**Table 4.1.1 Summary of complaints for the reporting period.**

Date	Pollution complaint category
27/07/2015	Noise
24/10/2015	Unauthorised access
1/04/2016	HV speeding

**Figure 4.1.1** is a summary of the complaints received relating to operations at the Hera Mine. The complaints have predominately originated from a sole complainant and have related to noise and blast vibration allegedly originating from the mine site. The company has an open and honest relationship with the community and takes all complaints seriously. Information relating to the complaint are supplied to the complainant as required. A full investigation of all complaints is completed and follow up is conducted if required.



**Figure 4.1.1 Summary of complaints received for the life of the Hera Mine**

### 4.2 Community Liaison

Hera Mine recognizes its responsibilities as a member of the Nymagee and surrounding region and demonstrates this through a range of community contacts, provisions and interactions. Summary of this involvement is presented in **Table 4.2.1**.

**Table 4.2.1 Summary of the Company’s involvement with the Nymagee and surrounds community.**

Forum	Contribution
Nymagee and surrounds	<ul style="list-style-type: none"> <li>• Hera Mine is one of the largest employers in the local regions and recognizes this by employing local residents where possible and sourcing contractors from the local region;</li> <li>• Attended the Country Women’s Association Biggest Morning Tea</li> </ul>
Financial contribution	<ul style="list-style-type: none"> <li>• Country Education Foundation</li> <li>• Cobar High School</li> <li>• Nymagee Flower Show</li> <li>• WIRES</li> <li>• Nymagee Christmas Party.</li> </ul>
Community Consultative Committee (CCC) Meetings	Hera Mine host a community meeting on a regular basis. The meeting is attended by community representatives to discuss environmental and operational progress of the mine and provides an opportunity to discuss any concerns the community may have.
Company website	The Company operate and update a website where it provides operational, environmental and cash flow reports, environmental monitoring data, management plans and independent audits.
The ‘Hera News’	A newsletter is distributed to the local community on a regular basis. It provides operational and environmental updates.

## 5 Rehabilitation

### 5.1 Buildings

No buildings were rehabilitated during the reporting period.

### 5.2 Rehabilitation of disturbed land

Hera mine has recently completed the construction phase of the project. No significant rehabilitation of disturbed land has occurred in the reporting period. However, where possible small sections of disturbed land are rehabilitated as required (e.g. unused roads are closed, ripped and seeded). **Figure 5.2.1** is a photo of an area that had access restricted in this reporting period. Infrastructure was removed, vehicle access restricted and the area was ripped to encourage natural regrowth.



**Figure 5.2.1** A photo looking north of the old laydown yard that was decommissioned in this reporting period.

### 5.3 Other Infrastructure

Upon completion of exploration drilling, disturbed sites are rehabilitated. Other mine infrastructure (e.g. boundary fencing, bunds, water storages, etc.) are rehabilitated as required.

## 5.4 Rehabilitation Trials and Research

No rehabilitation trials or research were conducted in this reporting period.

## 5.5 Further Development of the Final Rehabilitation Plan

A summary of rehabilitation activities is provided in **Table 5.5.1**. Current and planned maintenance activities of rehabilitated land are presented in **Table 5.5.2**. Proposed affected areas will be dependent on the outcome of the application to amend the PA. The current MOP is applicable until 2020. The final rehabilitation plan will be addressed in future MOPs.

**Table 5.5.1 Summary of rehabilitation activities**

		Area Affected/ Rehabilitated (hectare (ha))		
		To Date	Last Report	Next Report
<b>A</b>	<b>Mine Lease Area</b>	64.4		
<b>B</b>	<b>Disturbed Areas</b>			
B1	- Infrastructure	33	33	33
B2	- Active Mining	underground	Underground	underground
B3	- Waste	2	2	2
B4	- Tailings	29.4	29.4	29.4
<b>C</b>	<b>Rehabilitation</b>			
C1	Total rehabilitated area	0	0	0
<b>D</b>	<b>Rehabilitation on Slopes</b>			
D1	10 to 18 degrees	0	0	0
D2	Greater than 18 degrees	0	0	0
<b>E</b>	<b>Surface of Rehabilitated Land</b>			
E1	Pasture and Grasses	1	1	1.5
E2	Native Forest	0	0	0
E3	Plantation/crops	0	0	0
<b>E4</b>	<b>Other</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 5.5.2 Maintenance activities on rehabilitated land**

Nature of Treatment	Area Treated (ha)		Comment/ Control Strategies/ Treatment
	Report Period	Next Period	
Additional Erosional Control Works	0.5	0	
Re-covering	0	0	
Soil Treatment	0	0	
Treatment/ Management	0	0	
Re-seeding/ Replanting	0	0.5	
Adversely Affected by Weeds	1	1	Annual weed spraying to be undertaken
Feral Animal Control	1	1	Annual feral animal control to be undertaken

## 6 Activities Proposed in the next AEMR Period

### 6.1 Summary

Activities proposed for the next AEMR reporting period are expected to require some adjustments to the MOP. Proper approvals and planning will be conducted before deviating from the MOP. **Table 6.1.1** is a summary of proposed activities for the next AEMR reporting period

**Table 6.1.1 Activities proposed for the next AEMR reporting period.**

Proposed activity	Status	Comments
Management of weeds and pests at biodiversity offset property (Chelsea).	In progress	Investigating best options for biodiversity management.
Management of weeds and pests at Hera Mine	In progress	Investigating best options for biodiversity management.
Drilling of additional production bores and monitoring bores as required, after proper approvals have been sort.	Scope of works report submitted to relevant agencies.	Works dependent on the outcome of the Project Approval amendment application.
Investigation into the storage of runoff from the Hera Mine	In progress	Investigating all options for containing site water runoff.
Planned extension of the Mining Lease associated with the discovery of additional resources underground.	In progress	This is associated with Modification 4 that has been submitted to relevant departments.

## 7 Appendices

### 7.1 2016 Flora and Fauna Monitoring Report: Hera Mine and the Chelsea Biodiversity Offset Areas

*See attached*