HERA MINE
ANNUAL REVIEW

PROJECT APPROVAL 10_0191
MINING LEASE 1686
MINING LEASE 1746

For the period
16 May 2019 to 15 May 2020



aurelia METALS safe metals

Name of Operation	HERA MINE
Name of Operator	Hera Resources Pty Ltd
Development Consent / Project Approval #	PA 10_0191
Name of holder of development consent / project approval	Hera Resources Pty Ltd
Mining Lease #	MINING LEASE 1686 MINING LEASE 1746
Name of Mining Lease Holder:	Hera Resources Pty Ltd
Water Licence #	WAL 43173
Name of holder of water licence	Aurelia Metals Ltd
MOP Commencement Date:	1 January 2020
MOP Completion Date:	31 December 2022
Annual Review Commencement Date:	16 May 2019
Annual Review Completion Date:	15 May 2020

I, Liam Richards, certify that this audit report is a true and accurate record of the compliance status of Hera Mine for the period 16 May 2019 to 15 May 2020 and that I am authorised to make this statement on behalf of Hera Resources Pty Ltd.

Note.

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud or misleading statement – maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents – maximum penalty 2 years imprisonment or $22,000, or both).*

Name of Authorised Reporting Officer:	Liam Richards
Title of Authorised Reporting Officer:	Environment Advisor
Signature of Authorised Reporting Officer:	
Date:	14 August 2020

Table of Contents

1 STATEMENT OF COMPLIANCE 8

2 INTRODUCTION 10

2.1 Summary 10

2.2 Mine Contacts 10

3 APPROVALS 13

3.1 Overview 13

3.2 Project Approval 13
3.2.1 PA 10_0191 13
3.2.2 DA 2012/LD-00004 14

3.3 Leases 14

3.4 Licenses 15
3.4.1 EPL 20179 15
3.4.2 Water Access Licences 15
3.4.3 Other Licences 15

3.5 Other Approvals 15
3.5.1 MOP 15
3.5.2 WLL 2455 15

4 OPERATIONS SUMMARY 16

4.1 Mining Operations 16
4.1.1 Exploration 16
4.1.2 Land Preparation 16
4.1.3 Mining 16

4.2 Other Operations 18
4.2.1 Mineral Processing and Transport 18
4.2.2 Stockpiled Materials 18
4.2.3 Construction 19
4.2.4 Hours of Operation 19
4.2.5 Waste Management 20
4.2.6 Hazardous Material Management 20

4.3 Next Reporting Period 20

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEWS 21

6 ENVIRONMENTAL PERFORMANCE 22

6.1 Meteorology 22

6.2 Air Quality and Greenhouse Gas 25
6.2.1 Environmental Management 25
6.2.2 Environmental Monitoring Results 26

6.2.3 Performance Issues and Proposed Improvements 30

6.3 Erosion and Sediment 31
6.3.1 Environmental Management 31
6.3.2 Environmental Monitoring Results 31
6.3.3 Performance Issues and Proposed Improvements 31

6.4 Contaminated Polluted Land and Hazardous Materials 31
6.4.1 Environmental Management 31
6.4.2 Environmental Monitoring Results 32
6.4.3 Performance Issues and Proposed Improvements 32

6.5 Threatened Flora and Fauna 32
6.5.1 Environmental Management 32
6.5.2 Environmental Monitoring Results 33
6.5.3 Performance Issues and Proposed Improvements 33

6.6 Weed and Pest Management 34
6.6.1 Environmental Management 34
6.6.2 Environmental Monitoring Results 34
6.6.3 Performance Issues and Proposed Improvements 34

6.7 Blasting 34
6.7.1 Environmental Management 34
6.7.2 Environmental Monitoring Results 35
6.7.3 Performance Issues and Proposed Improvements 38

6.8 Operational Noise 39
6.8.1 Environmental Management 39
6.8.2 Environmental Monitoring Results 39
6.8.3 Performance Issues and Proposed Improvements 40

6.9 Traffic Management 40
6.9.1 Environmental Management 40
6.9.2 Environmental Monitoring Results 40
6.9.3 Performance Issues and Proposed Improvements 41

6.10 Heritage 41
6.10.1 Environmental Management 41
6.10.2 Environmental Monitoring Results 41
6.10.3 Performance Issues and Proposed Improvements 41

6.11 Visual, Stray Light 42
6.11.1 Environmental Management 42
6.11.2 Environmental Monitoring Results 42
6.11.3 Performance Issues and Proposed Improvements 42

6.12 Bushfire 42
6.12.1 Environmental Management 42
6.12.2 Environmental Monitoring Results 42
6.12.3 Performance Issues and Proposed Improvements 42

6.13 Public Safety 42
6.13.1 Environmental Management 42
6.13.2 Environmental Monitoring Results 43
6.13.3 Performance Issues and Proposed Improvements 43

7 WATER MANAGEMENT 44

7.1 Water Management 44

7.2 Surface Water Pollution 45
7.2.1 Environmental Management 45
7.2.2 Environmental Monitoring Results 47
7.2.3 Performance Issues and Proposed Improvements 47

7.3 Groundwater Pollution 47
7.3.1 Environmental Management 47
7.3.2 Environmental Monitoring Results 48
7.3.3 Performance Issues and Proposed Improvements 54

8 REHABILITATION 55

8.1 Buildings and Infrastructure 55

8.2 Rehabilitation of Disturbed Land 55

8.3 Rehabilitation Trials and Research 55

8.4 Further Development of the Final Rehabilitation Plan 56

9 COMMUNITY 58

9.1 Environmental Complaints 58

9.2 Community Liaison 58

10 INDEPENDENT AUDIT 60

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD 65

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD 66

Figures

Figure 1 Regional Locality 11
Figure 2 Site Layout 12
Figure 3 Schematic of bench stoping mining method 17
Figure 4 Summary of the Rainfall and Windspeed conditions for the reporting period 22
Figure 5 Environmental Monitoring Locations and Receptors 23
Figure 6 Temperature Summary for the Reporting Period 24
Figure 7 Wind Rose Report for Hera (16 May 2019 to 15 May 2020) 24
Figure 8 Dust deposition gauge results for the reporting period 26
Figure 9 HVAS 24hr PM10 Results for the Reporting Period 28
Figure 10 Average Dust Deposition Results 2014 to 2020 29
Figure 11 TSP Long Term Annual Averages 29
Figure 12 PM_{10} Long Term Annual Averages 30
Figure 13 2019-20 Blast Overpressure Monitoring Results 36
Figure 14 2019-20 Blast Vibration Monitoring Results (Day) 36
Figure 15 2019-20 Blast Vibration Monitoring Results (Evening) 37
Figure 16 2019-20 Blast Vibration Monitoring Results (Night/Sunday/PH) 37
Figure 17 Summary of the Average Blast Vibration for the Life of the Hera Mine 38

Figure 18 Water Monitoring Locations....46
Figure 19 Summary of standing water levels for the life of mine at Hera Mine....52
Figure 20 Summary of the groundwater pH for the life of mine at Hera Mine....52
Figure 21 Summary of the Groundwater Electrical Conductivity for the life of mine at Hera Mine....53
Figure 22 Summary of Groundwater production for the life of the mine....54
Figure 23 Summary of complaints received for the life of the Hera Mine....58

Tables

Table 1 Statement of Compliance....8
Table 2 Non-Compliances During the Reporting Period....8
Table 3 Compliances Status Categories....9
Table 4 Mine Contacts....10
Table 5 Consents, Leases and Licences....13
Table 6 PA10_0191 Annual Review Conditions....14
Table 7 Production Summary for the 2019-2020 Financial Year Period....17
Table 8 Stockpile details for the reporting period....19
Table 9 Waste Management during the reporting period....20
Table 10 Actions Required from 2018-2019 Annual Review....21
Table 11 Air Quality Monitoring Criteria....25
Table 12 Stack Nitric Oxide Monitoring Criteria and Results....26
Table 13 2019-2020 Depositional Dust Monitoring Data....27
Table 14 2019-2020 HVAS Monitoring Data....27
Table 15 2018-2019 NGERs Data....30
Table 16 Blast Criteria....35
Table 17 Blast Monitoring Results Summary....35
Table 18 Noise Criteria....39
Table 19 Summary of attended noise monitoring results conducted by EMM on 19 and 20 September 2018....39
Table 20 Monthly Volumes of Concentrate Transported....40
Table 21 Water Management Details for the Reporting Period....44
Table 22 Surface Water Monitoring Points....45
Table 23 Surface Water Monitoring Results....47
Table 24 Groundwater Monitoring Program....48
Table 25 Groundwater Monitoring Results....49
Table 26 Water Take....49
Table 27 Groundwater Extraction Per Bore....49
Table 28 Summary of Water Flows Onsite and Comparison to the Water Balance....51
Table 29 Summary of Rehabilitation Activities....57
Table 30 Summary of Community Consultation During the Reporting Period....59
Table 31 Summary of Incidents and Non-Compliances during the Annual Review Period....60
Table 32 Summary of Incidents and Non-Compliances during the Annual Review Period....65
Table 33 Activities Proposed for the Next Annual Review Reporting Period....66

Appendices

Appendix A Water Quality Monitoring Results
Appendix B Blast Monitoring Results
Appendix C Attended Noise Monitoring Report
Appendix D Annual Column Trial Report
Appendix E 2019 Independent Environmental Audit

ABBREVIATIONS

µg	Micrograms
µm	Micrometre
CCC	Community Consultative Committee
dB	Decibels
DDG	Dust Deposition Gauges
DoI Water	Department of Industry - Water (former)
DPE	Department of Planning and Environment (former)
DPIE	Department of Planning, Industry and Environment
EA	Environmental Assessment
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ha	Hectare
HVAS	High Volume Air Sampler
IA	Inaudible
m^3	Cubic Metre
ML	Mining Lease
mm/s	Millimetre per second
MOP	Mining Operations Plan
NRAR	Natural Resources Access Regulator *(formally DoI Water)*
NR	No result
NSW	New South Wales
NSW EES	NSW Environment, Energy and Science *(formally OEH)*
OEH	*Former* Office of Environment and Heritage
Oz	Ounces
PA	Project Approval
PM_{10}	Particulate Matter less than 10µm
SDS	Safety Data Sheet
t	Tonnes
tpa	Tonnes per annum
TSF	Tailings Storage Facility
TSP	Total Suspended Particulate
WAD Cn	Weak Acid Dissociable Cyanide
WAL	Water Access Licence
WLL	Western Lands Lease
WREA	Waste Rock Emplacement Area

1 Statement of Compliance

A summary of compliance at Hera Mine during the 2019-2020 reporting period is provided in **Table 1.**

Table 1 Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
PA 10_0191	No
EPL 20179	No
Mining Lease 1686	Yes
Mining Lease 1746	Yes
Water Access Licence 43173	Yes

A summary of the non-compliances during the reporting period have been summarised in **Table 2.** The non-compliances during the 2019-2020 reporting period are discussed further in **Section 11**. The non-compliance categories are described in **Table 3**.

Table 2 Non-Compliances During the Reporting Period

Relevant Approval	Condition No.	Condition Description Summary	Compliance Status	Comments	Where Addressed
PA10_0191	Schedule 3, Cond. 12	Ensure that dust emissions generated do not exceed the criteria.	Non-compliant	Several elevated dust levels have been recorded at Hera since July 2019 at the High Volume Air Samplers (HVAS) (Total Suspended Particulate (TSP) and Particulate Matter less than 10 micron (PM_{10})) and at the dust deposition gauges. These exceedances are most likely due to ongoing drought conditions. All incidences were reported to relevant agencies.	Section 6.2
PA10_0191	Schedule 3, Cond. 4	Ensure that blasting does not exceed the criteria.	Non-compliant	The overpressure microphone recorded an overpressure reading of 132 dB(L) from a development shot 270m below surface. This was reported to relevant agencies.	Section 6.7
PA10_0191	Schedule 2, Cond. 1	Ensure the prevention and/or minimisation of any material harm to the environment.	Non-compliant	Discharge of water from the Waste Rock Emplacement Area (WREA) Leachate Pond to the Sediment Basin via an open internal spoon drain. This was reported to relevant agencies.	Section 7.2
EPL 20179	Cond. M2.3	Requirement to monitor daily during any discharge.	Non-compliant	Weak Acid Dissociable Cyanide (WAD Cn) Levels were not measured for 3 days. This was reported to relevant agencies.	Section 7.2
PA10_0191	Schedule 5, Cond. 7	Incident and Non-compliance notification.	Non-compliant	Temporary placement of waste rock on the WREA resulting in pushed up rock being above the 10m height.	N/A

Table 3 Compliances Status Categories

Risk Level	Colour Code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-Compliant	Non-compliance which does not result in any risk of environmental harm

2 Introduction

2.1 Summary

Hera Mine (Hera) is an underground metalliferous mine owned by Hera Resources Pty Ltd (Hera Resources), a wholly owned subsidiary of Aurelia Metals Limited (Aurelia). The mine is located approximately 100km southeast of Cobar and approximately 4km south of Nymagee in the central west of New South Wales (NSW) (refer **Figure 1**). The site consists of an underground mine, a run-of-mine (ROM) pad, temporary waste rock emplacement (WRE), processing plant, tailings storage facility (TSF), and associated infrastructure and ancillary activities (refer **Figure 2**).

The site operates in accordance with Project Approval (PA) 10_0191 which was issued by the former Department of Planning and Infrastructure (now Department of Planning, Industry and Environment [DPIE]) on 31 July 2012 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). PA 10_0191 has since been modified five times with the fifth modification (MOD 5) submitted and approved during the reporting period. In addition, Development Consent 2012/LD-00004 was granted by Cobar Shire Council on 14 March 2012 for the mine camp, including accommodation facilities, ablution facilities, a water treatment facility, communal facilities and a communal car park. The site also operates in accordance with Mining Lease (ML) 1686 (issued 16 May 2013) and ML 1746 (issued 7 December 2016) issued under the *Mining Act 1992* (Mining Act), as well as Environment Protection Licence (EPL) 20179.

This Annual Review has been prepared for the period from 16 May 2019 to 15 May 2020 (herein referred to as the reporting period), and has been prepared in accordance with the following:

- Schedule 5, Condition 4 of PA 10_0191;
- Condition 4 of ML 1686;
- Condition 3 of ML 1746; and
- The NSW Government Guideline, Annual Review Guideline (October 2015).

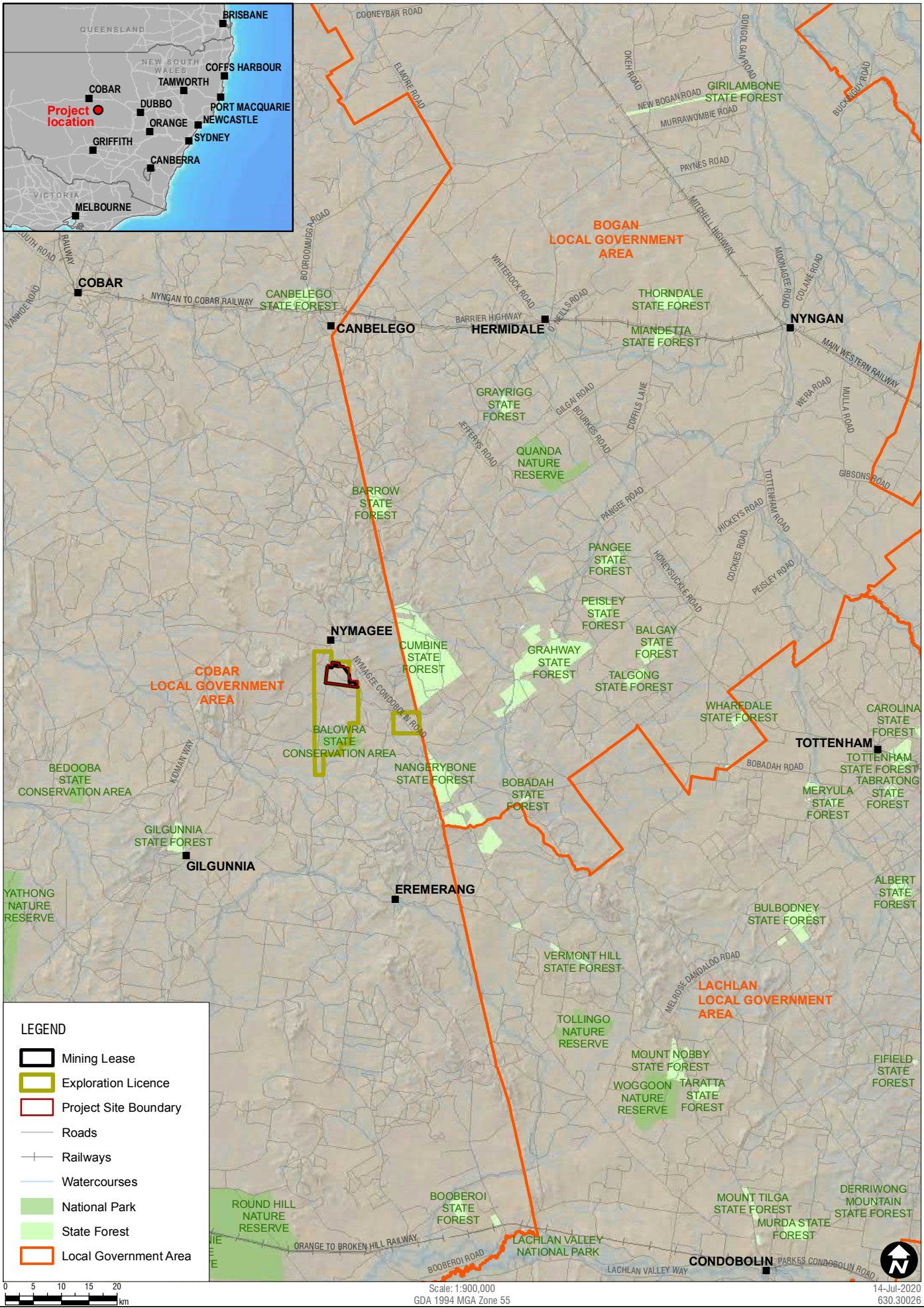
Copies of this Annual Review are distributed to DIPE, Resources Regulator, Natural Resources Access Regulator (NRAR), Environment Protection Authority (EPA), NSW Environment, Energy and Science (EES) (formally the Office of Environment and Heritage [OEH]), Central West Local Land Services (LLS), Department of Industry – Crown Lands (DoI Crown Lands), Cobar Shire Council, Bogan Shire Council, and local mining companies. Additionally, a copy will be made available on the Aurelia Metals website for the general public.

2.2 Mine Contacts

Table 4 lists the site contacts for Hera.

Table 4 Mine Contacts

Name	Role	Phone number	Email Address
Kerry Payne	General Manager	02 6837 3006	kerry.payne@aureliametals.com.au
Liam Richards	Environment Advisor	02 6837 3019	liam.richards@aureliametals.com.au
General Enquiries/ Complaints	-	1300 016 240	complaints@aureliametals.com.au



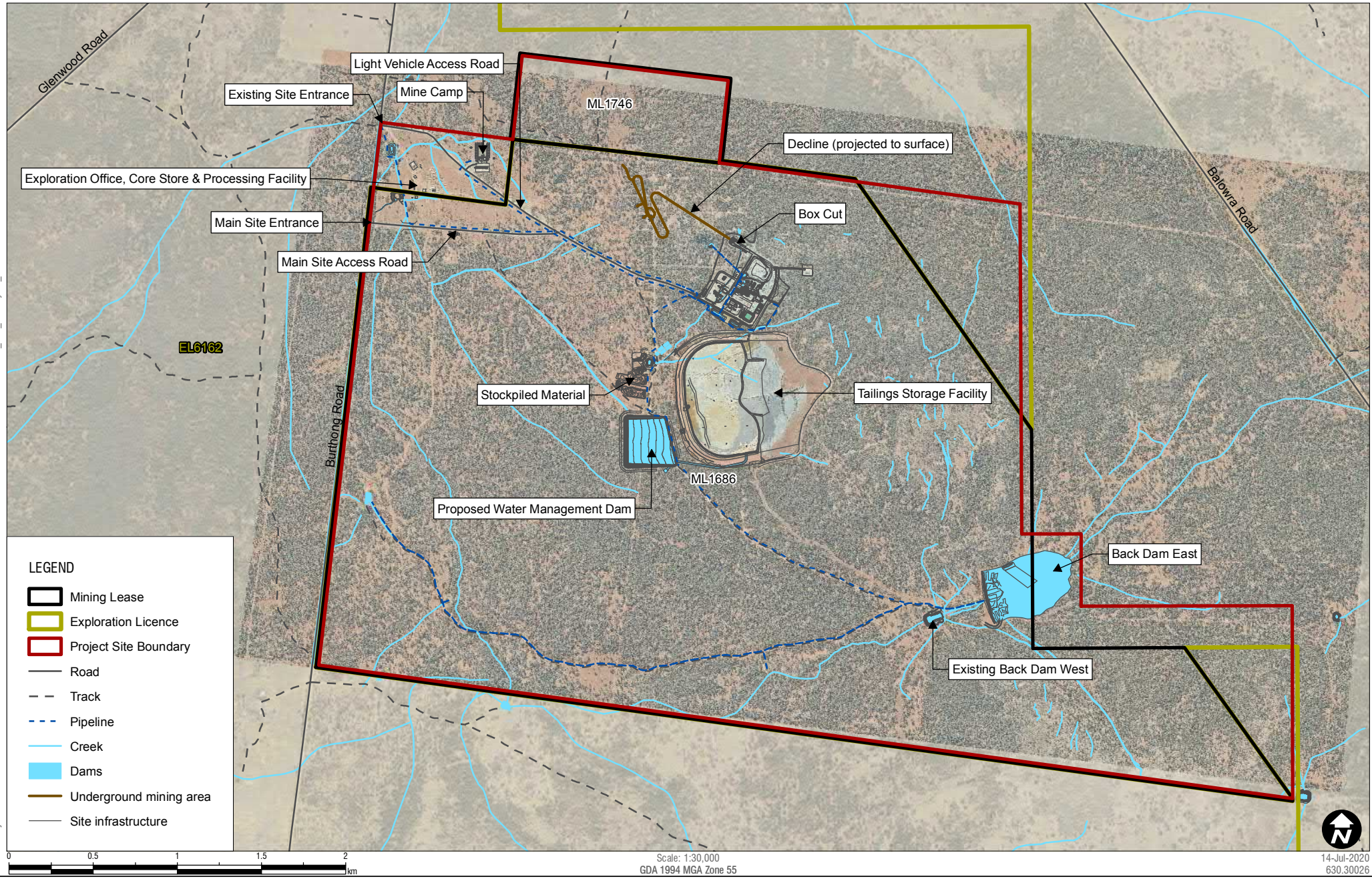
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Regional Locality

FIGURE 1



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Site Layout

FIGURE 2

3 Approvals

3.1 Overview

Table 5 lists the relevant consents, leases and licenses associated with Hera. These are discussed in further detail in the following sections.

Table 5 Consents, Leases and Licences

Consent/Lease/Licence	Licence Number	Date of Issue	Expiry	Relevant Authority
Project Approval	10_0191	31 July 2012	31 December 2022	DPIE
Development Approval	2012/LD-00004	14 March 2012	N/A	Cobar Shire Council
Mining Lease	ML 1686	16 May 2013	16 May 2034	Resources Regulator
Mining Lease	ML 1746	7 December 2016	7 December 2037	Resources Regulator
Environment Protection Licence	20179	18 March 2013	N/A - Anniversary date 18 March	EPA
Mining Operations Plan	N/A	1 January 2020	31 December 2022	Resources Regulator
Water Access Licence (WAL)	WAL 43173	6 March 2020	N/A	NRAR
Western Land Lease	WLL 2455	April 1911	Perpetual Lease	DoI – Crown Lands
Dangerous Goods Licence	35/038197	22 November 2011	Expires: N/A	SafeWork NSW
Explosives Licence	XSTR200011	2012	6 June 2022	SafeWork NSW
Radiation Licence	5066818	16 April 2019	N/A - Anniversary date 30 July	EPA

3.2 Project Approval

3.2.1 PA 10_0191

PA 10_0191 (as modified) allows for the processing of up to 505,000 tonnes of ore, and transportation of up to 60,000 tonnes of concentrate from the site pear year, until 31 December 2022. Five modifications to PA 10_0191 have been approved, as summarised below:

- MOD 1 – Extension of onsite powerlines from the surface ventilation fan to the mine camp (determined 11 July 2013);
- MOD 2 – Modification to the approved haulage route along Nymagee-Hermidale Road (determined 21 November 2014);
- MOD 3 – Increase to the ore production rate and construction of supporting infrastructure (determined 25 February 2016);
- MOD 4 – Extension to the approved project boundary to extract and process an additional 62,000 t of gold-zinc-lead ore (determined 21 September 2016); and
- MOD 5 - Increasing the rate of transportation of concentrate from Hera to the Hermidale rail siding from 50,000 t per calendar year to 60,000 t per calendar year, installation of a 13.7 hectare (ha), 204 mega litre (ML) crest height Water Management Dam to act as an external decant pond for the existing TSF, receipt of water from dewatering of the Nymagee Copper Mine for use in processing operations at Hera or evaporation within the Water Management Dam, and increasing the approved maximum elevation of the

Southern WREA from 10m above ground level to 15m above ground level, or approximately 350m AHD (determined 3 December 2019).

The conditions of PA 10_0191 as relevant to this Annual Review, and where they have been addressed in this document, are provided in **Table 6** below.

Table 6 PA10_0191 Annual Review Conditions

Condition	Where Addressed
Monitoring of Concentrate Transport 37. The Proponent shall: (a) keep accurate records of the: (i) amount of lead and zinc concentrate transported from the site (on a monthly basis); (ii) the date and time of loaded truck movements from the site; and (b) provide the Secretary with a summary of these truck movements in the Annual Review.	Section 6.9
Annual Review **Schedule 5** 4. By the end of December each year (or other such timing as agreed by the Secretary), the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;	Section 4
(b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the: (i) the relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this approval; (iii) the monitoring results of previous years; and (iv) the relevant predictions in the EA;	Section 6
(c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;	Sections 1 and 11
(d) identify any trends in the monitoring data over the life of the project;	Section 6
(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	Section 6
(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.	Section 6
ACCESS TO INFORMATION 11. Prior to the commencement of construction on the site, the Proponent shall: (a) make copies of the following publicly available on its website: (vii) the annual reviews required under this approval; and (b) keep this information up-to-date.	Section 9.2

3.2.2 DA 2012/LD-00004

Development consent 2012/LD-00004 was granted by Cobar Shire Council on 14 March 2012 for the construction and use of a mine camp, including accommodation facilities, ablution facilities, a water treatment facility, communal facilities and a communal car park.

3.3 Leases

Hera Resources currently holds two mining leases (ML 1686 and ML 1746).

3.4 Licenses

3.4.1 EPL 20179

Hera operates under EPL 20179, with an anniversary date of 18 March. Monitoring results are reported to the EPA as part of the EPL Annual Return. During the reporting period, no Section 58 Licence Variations were sought, and no Section 91 Clean Up Notices were received from the EPA.

The environmental reporting and monitoring activities undertaken at Hera as required under EPL 20179, are discussed in **Section 6** and **Section 7.**

3.4.2 Water Access Licences

Hera currently holds WAL 43173 which permits extraction of up to 543 ML per year.

Previously Hera held WAL 28773 and WAL 30298 which permitted extraction of up to 540ML and 3ML per year respectively.

3.4.3 Other Licences

Hera currently holds explosives licence XSTR200011, Dangerous Goods Licence 35/038197 and Radiation Licence 5066818.

3.5 Other Approvals

3.5.1 MOP

Hera operates in accordance with the approved Mining Operations Plan (MOP) which covers the period from 1 January 2020 to 31 December 2022. An amended MOP was submitted in January 2020 to include operations associated with PA 10_0191 MOD 5 (refer **Section 3.2.1**). The MOP was approved on 28 February 2020.

3.5.2 WLL 2455

The Mine Site is located on land held by Hera Resources under Western Lands Lease No. WLL 2455, granted under the *Western Lands Act 1901* and managed by DoI Crown Lands.

4 Operations Summary

4.1 Mining Operations

4.1.1 Exploration

Hera conducts exploration activities within ML 1686 in accordance with the approved MOP.

During the reporting period, the following exploration activities were undertaken:

- Eight RC holes drilled at the Dominion Prospect;
- Fifty-nine RC holes, some with diamond tails collared at the Federation Prospect;
- Twelve diamond holes, including wedges, drilled at the Federation Prospect;
- DHEM on selected holes;
- XRF soil sampling at the Polyphemus, Ceres & Federation NE Prospects;
- Rock chipping at the Ceres Prospect;
- IP surveying in the Federation-Dominion Prospect area and at Ceres.

During the reporting period, the following exploration activities were undertaken within ML 1686:

- Fourteen RC holes drilled, four with diamond tails at the Athena prospect;
- Three wedge holes drilled off diamond parent hole HRD65 at Main Southeast;
- Ten vertical reconnaissance RC holes drilled at various locations across ML1686;
- An RC hole drilled at a newly discovered prospect named Io;
- One diamond drill hole drilled at the Zeus prospect;
- DHEM on selected holes;
- Eighty-four underground diamond holes were drilled into seven areas of the mine for resource infill, i.e. the Western Pb-Zn lens, Upper Main South, Far West, North Pod Uppers, North Pod Offset Lens, Main South, Upper Main North.

All surface exploration boreholes were fully sealed to prevent cross contamination between groundwater systems. No exploration boreholes were rehabilitated during the reporting period. Rehabilitation works have been undertaken on sites and tracks where it has been deemed no further exploration activities will be undertaken. Further rehabilitation works are ongoing as areas are sterilised for exploration purposes.

4.1.2 Land Preparation

Land preparation was undertaken in accordance with ESG5 for the majority of surface exploration drilling, unless drilling activities were designed and completed within pre-disturbed areas. Land preparation included clearing of access tracks and drill sites (described above) using a combination of loader, dozer to allow access and safe operation of drilling equipment and an excavator for the construction of inground sumps for the containment of drilling fluids used and produced during the drilling process.

4.1.3 Mining

Mining for the period was undertaken using conventional bench stoping mining techniques. **Figure 3** presents a schematic overview of this 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 WREA on the surface.

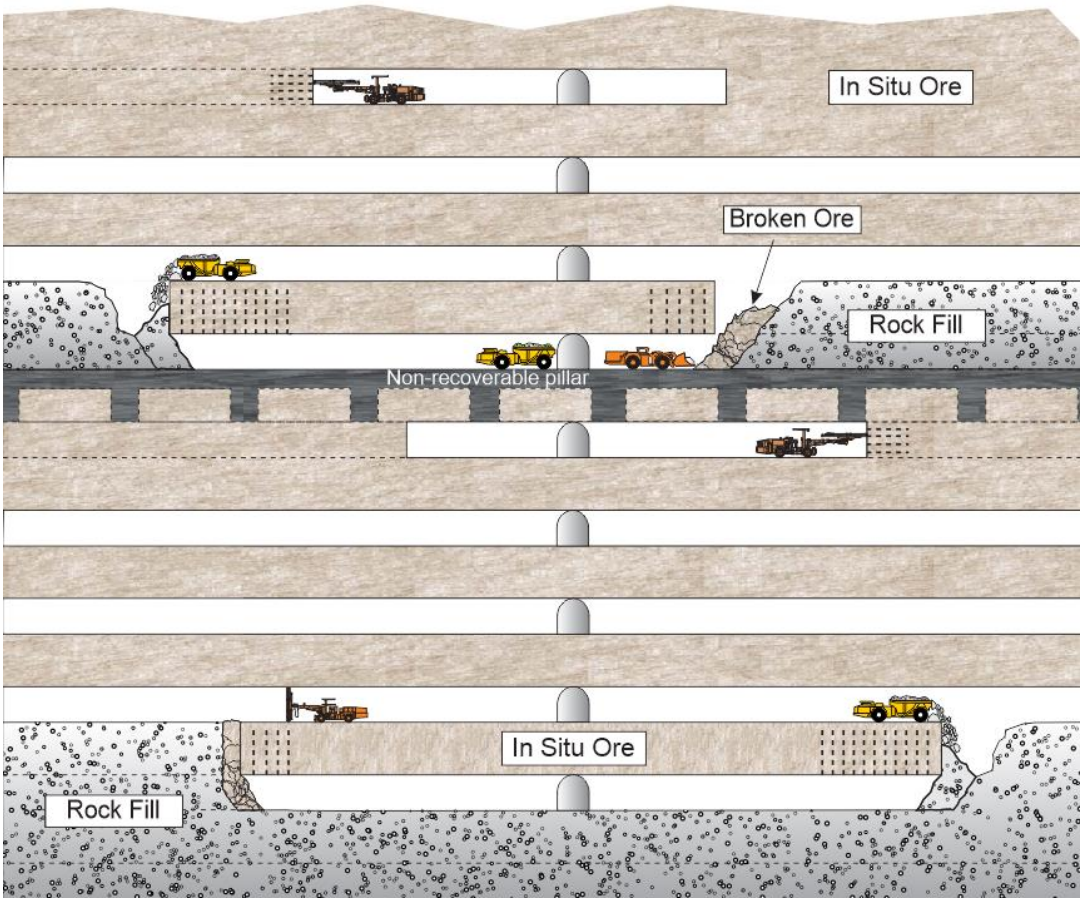


Figure 3 Schematic of bench stoping mining method

Mining activities conducted during the financial year period (1 July 2019 to 30 June 2020) are summarised in **Table 7**.

Table 7 Production Summary for the 2019-2020 Financial Year Period

Material	Approved Limit (PA 10_0191)	2020 CY MOP Prediction	2018-2019 FY (Actual)	2019-2020 FY (Actual)	2020-2021 FY (Forecast)
Waste Rock *	N/A	-68,000 t	0 t	-98,856 t	-62,000 t
ROM Ore	505,000 t	486,000 t	468,358 t	410,495 t	490,000 t
Tailings (Solids)	N/A	400,000 t	437,130 t	369,391 t	407,000 t
Saleable Product (Gold)	N/A	36,500 oz	58,025 oz	45,031 oz	28,000 oz
Saleable Product (Lead / Zinc Bulk Concentrate)**	N/A	48,000 t	31,206 t	41,859 t	51,000 t

* There was an increase in waste rock that came to surface due to limited space underground – this contradicts the FY19 AEMR. This caused Hera to have a WREA non-compliance for being over the 10m height in May 2019. By the 30 May 2019 all the waste rock that was temporarily placed on the WREA had been trucked back underground. No waste rock is planned to be brought to surface in FY21, as all waste will be used in backfilling stopes.

** No annual production limit for concentrate however can only transport up to 50,000tpa (calendar year).

The volume of ROM ore produced during the 2018-2019 financial year (410,495 t) was within the approved 505,000 t limit stipulated in PA 10_0191. The volume of ROM ore, tailings, and gold produced during the 2019-2020 financial year were greater than the previous year. The volumes produced during the 2019-2020 financial year was less than the volumes predicted in the MOP however saleable gold was higher.

Waste rock was unexpectedly brought to the surface during the reporting period, as described in **Table 7**. No waste rock is planned to be brought to surface in the following financial year, as all waste will be used in backfilling stopes.

4.2 Other Operations

4.2.1 Mineral Processing and Transport

During the 2019-2020 financial year, approximately 369,391 t of tailings (solids), 45,031 oz of gold doré (unrefined bars), and 41,859 t of lead/zinc bulk concentrate were produced from the processing plant. All tailings were disposed of in the TSF.

Gold doré is transported offsite and zinc/lead concentrate is transported by road to the Hermidale rail siding. During the reporting period 41,551 t of lead/zinc bulk concentrate were transported from the site (refer **Section 6.9**).

4.2.2 Stockpiled Materials

Ore is not stockpiled at the site and is processed without delay. Waste rock from the underground is temporarily stockpiled in the WREA when required, and soil is stockpiled around the site. Waste rock and soil stockpile activities in the reporting period are summarised in **Table 8.**

Table 8 Stockpile details for the reporting period

Material	Approved Limit (PA 10_0191)	Stockpiles Previous Reporting Period (Actual)	Stockpiles this Reporting Period (Actual)	Next Reporting Period (Forecast)
Waste Rock stockpiled in WRE Area	n/a	81,200 m³ (surveyed 30 Jun 19)	26,280 m³ (surveyed 30 Jun 20)	0 m³
Soil Stockpiled	n/a	178,730 m³	180,941 m³	201,941 m³
Soil Used	n/a	0 m³	0 m³	0 m³

During the reporting period waste rock was bought to the surface temporarily due to limited space underground. By the 30 May 2019 all the waste rock that was temporarily placed on the WREA had been trucked back underground. The volume of waste rock stored at the surface has decreased during the reporting period as waste rock was progressively backfilled underground. No waste rock is planned to be brought to the surface during the following reporting period.

Additional soil was stockpiled following desilting of clean surface water catchment dams during the drought period. Further soil is forecast to be stockpiled during the next reporting period following the construction of the Water Management Dam. No soil was used during the reporting period or is planned to be used during the following reporting period.

The *Waste Rock Management Plan* was revised and updated in the reporting period to include modifying the approved WREA height limit to 15m (part of the MOD 5 application). Following the approval of MOD 5, the Plan was submitted to the relevant government agencies for consultation and approval on 16 February 2020. Further information was provided to DPIE on the 5 June 2020. No further correspondence has been received from DPIE.

4.2.3 Construction

During the 2019-2020 reporting period, Hera constructed infrastructure to receive water from the Nymagee Copper Mine for use in processing operations at the Mine or evaporation within the Water Management Dam.

4.2.4 Hours of Operation

During the reporting period, all activities were undertaken in accordance with the approved hours of operation. Prior to the approval of MOD5, approved hours of operation were as listed below:

- Vegetation clearing and topsoil stripping - 7am to 6pm, 7 days per week;
- Construction - 24 hours, 7 days per week;
- Mining, maintenance and processing operations – 24 hours, 7 days per week;
- Rehabilitation - Day / Evening; and
- Transportation of lead and zinc concentrate and gold doré from the site - 7am to 10pm, 7 days per week.

Since the approval of MOD5, approved hours of operation are:

- Vegetation clearing and topsoil stripping - 7am to 6pm, 7 days per week;
- Construction - 24 hours, 7 days per week;
- Construction of the Water Management Dam – daylight hours, 7 days per week;
- Mining, maintenance and processing operations – 24 hours, 7 days per week;
- Rehabilitation - Day / Evening; and
- Transportation of lead and zinc concentrate and gold doré from the site – daylight hours, 7 days per week.

4.2.5 Waste Management

Waste management for the period was undertaken in accordance with the commitments made in the MOP. Waste materials are recycled where possible. All waste materials removed from site are done so by licensed contractors. A summary of waste disposal during the reporting period is summarised in **Table 9.**

Table 9 Waste Management during the reporting period

Waste Stream	Description	Quantity
General waste	General waste for disposal.	62t
General recyclables	General mixed recyclables.	8.6t
Hazardous waste disposal	Oily Rags/absorbents, absorbent contaminated waste, chemicals, pond liners.	15.5t
Hazardous waste recycled	Oil Filters, waste grease, solvents	6.6t

4.2.6 Hazardous Material Management

Hazardous materials are managed according to the *Hazardous Materials Management Plan*. The *Hazardous Materials Management Plan* was revised and updated during the process of obtaining MOD 5 and was submitted to the relevant government agencies for consultation and approval on 16 February 2020. Further information was provided to DPIE on the 5 June 2020. No further correspondence has been received from DPIE.

Hazardous Materials management during the reporting period has included the following:

- Regular area-specific environmental inspections to ensure all hazardous materials are stored in accordance with relevant legislation and regulations;
- Purchase of bunds suitable for storage of IBCs and drums;
- Explosives are stored in a fit-for-purpose magazine;
- Updating of the chemical register as required;
- Updating of Safety Data Sheets (SDS) as required;
- Training of staff and contractors during inductions or as required; and
- Maintaining the licence to store hazardous and explosive materials during the period.

4.3 Next Reporting Period

Mining and exploration activities are expected to continue during the following reporting period in accordance with the approved MOP.

Hera plan to commence construction of a 13.7 ha, 204 ML (to embankment crest) Water Management Dam in August 2020 to act as an external decant pond for the existing TSF. The location of this dam is shown on **Figure 2.**

When required, the Hera Environmental Management Plans will be updated and submitted to the relevant government departments for consultation and approval.

5 Actions Required from Previous Annual Reviews

The 2018-2019 Annual Review was supplied to the DPIE, Resources Regulator, NRAR, EPA, OEH, Central West LLS, DoI Crown Lands, Cobar Shire Council and Bogan Shire Council. Feedback was received from DPIE dated 24 September 2019 noting that the document was satisfactory. Commitments made by Hera Resources in the previous Annual Review, and their status, are provided in **Table 10**.

Table 10 Actions Required from 2018-2019 Annual Review

Action Required from Previous Annual Review	Action Taken by Operator	Where discussed
Comments from DPIE		
The document is satisfactory	N/A	-
Comments from Resources Regulator		
The document is satisfactory	N/A	-
Commitments made by Hera in previous Annual Review		
Converting the Biodiversity Offset property from WLL to Freehold.	DoI Crown Lands have indicated that the Biodiversity Offset property is not eligible for conversion to Freehold as it does not meet the required criteria.	Section 6.5
Management of weeds and pests at Hera (investigating best options for biodiversity management).	Due to the prolonged drought, weed and pest management has been minimal. Weed and pest management is ongoing. Weed inspection by CSC was not undertaken in FY20 reporting period as CSC currently do not employ an Environmental Supervisor. Hoping to have CSC involved in the FY21 reporting period.	Section 6.6
After the successful completion of the previous column trials new tailings column trials will be undertaken under natural conditions to confirm preferred soil capping thickness. No areas suitable for field trials have been identified on the TSF to date due to transitioning from paddock style deposition to central discharge. Column trials are expected to take approximately 12 months.	Tailings column trials to continue during the FY21 reporting period.	

6 Environmental Performance

This section outlines the environmental performance of the mine during the reporting period. Environmental management, monitoring and key issues have been outlined for the relevant environmental aspects. It should be noted that as the mine is a hard rock metalliferous mine, issues such as subsidence, spontaneous combustion, and methane drainage/ventilation (requirements of the Annual Review Guideline) are not applicable.

6.1 Meteorology

In accordance with Schedule 3, Condition 16 of PA 10_0191, and Condition M4 of EPL 20179, Hera continued to operate the meteorological station throughout the reporting period. The meteorological station is located in the north-west of the site (refer **Figure 5**), and monitors rainfall, wind speed, wind direction, temperature, sigma theta, solar radiation and relative humidity.

In general, the 2019-2020 reporting period was less dry when compared to the previous reporting period due to a significant rainfall between February and April. Prior to February, it was very dry as drought conditions continued across NSW. Total annual rainfall was 377 mm, with 257.40 mm of this falling between February and April, compared to 266 mm during the previous reporting period. The daily minimum and maximum 2m temperatures ranged from -7.7°C to 43.9°C respectively, with an average daily maximum of 32.4°C. Average daily wind speeds ranged from 4.8 to 10.6 km/h, with a maximum of 56.9 km/h.

Rainfall and wind speed data has been summarised in **Figure 4**. Temperature data has been summarised in **Figure 6**, and wind direction data has been summarised in **Figure 7**. The meteorological monitoring results provide context for the environmental monitoring and management discussed further in this document.

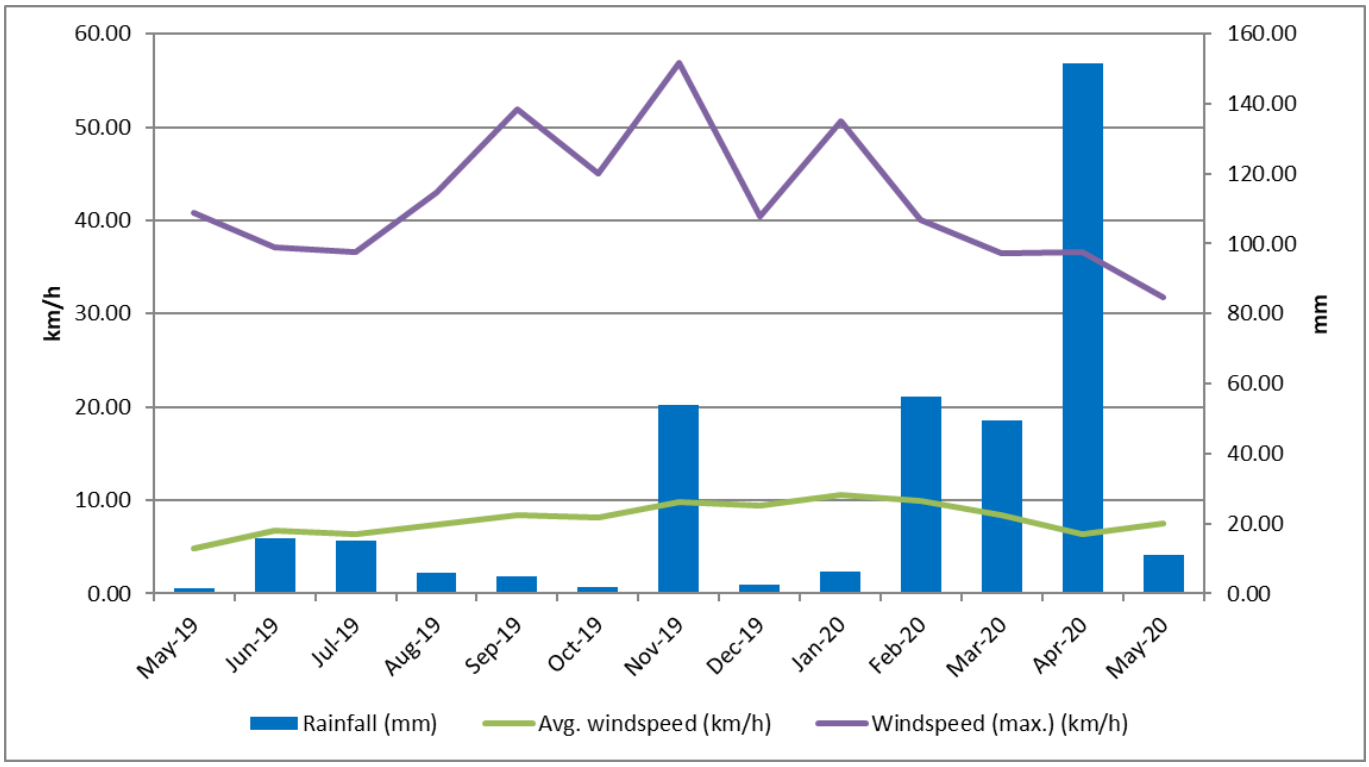
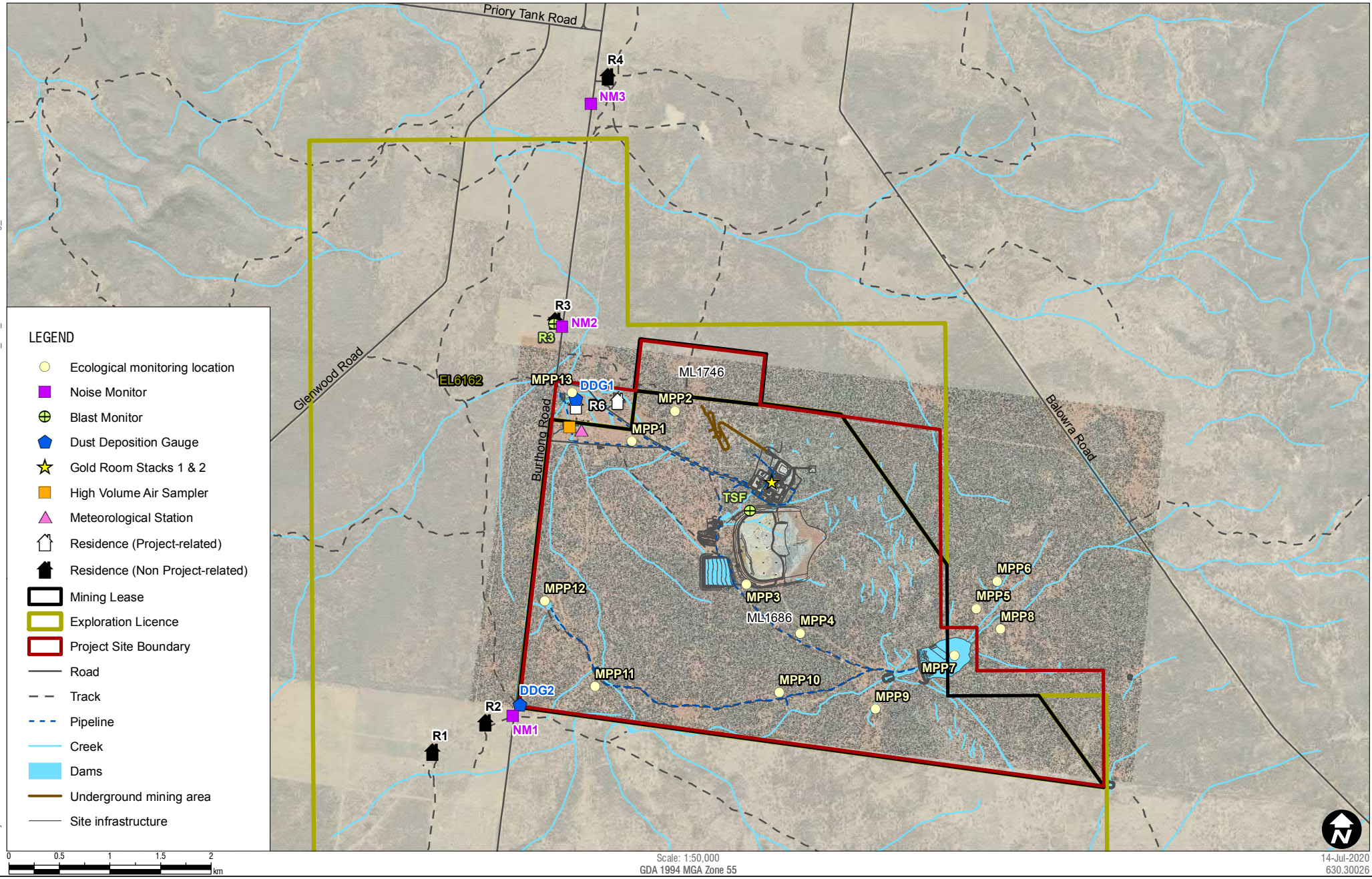


Figure 4 Summary of the Rainfall and Windspeed conditions for the reporting period



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Environmental Monitoring Locations and Receptors

FIGURE 5

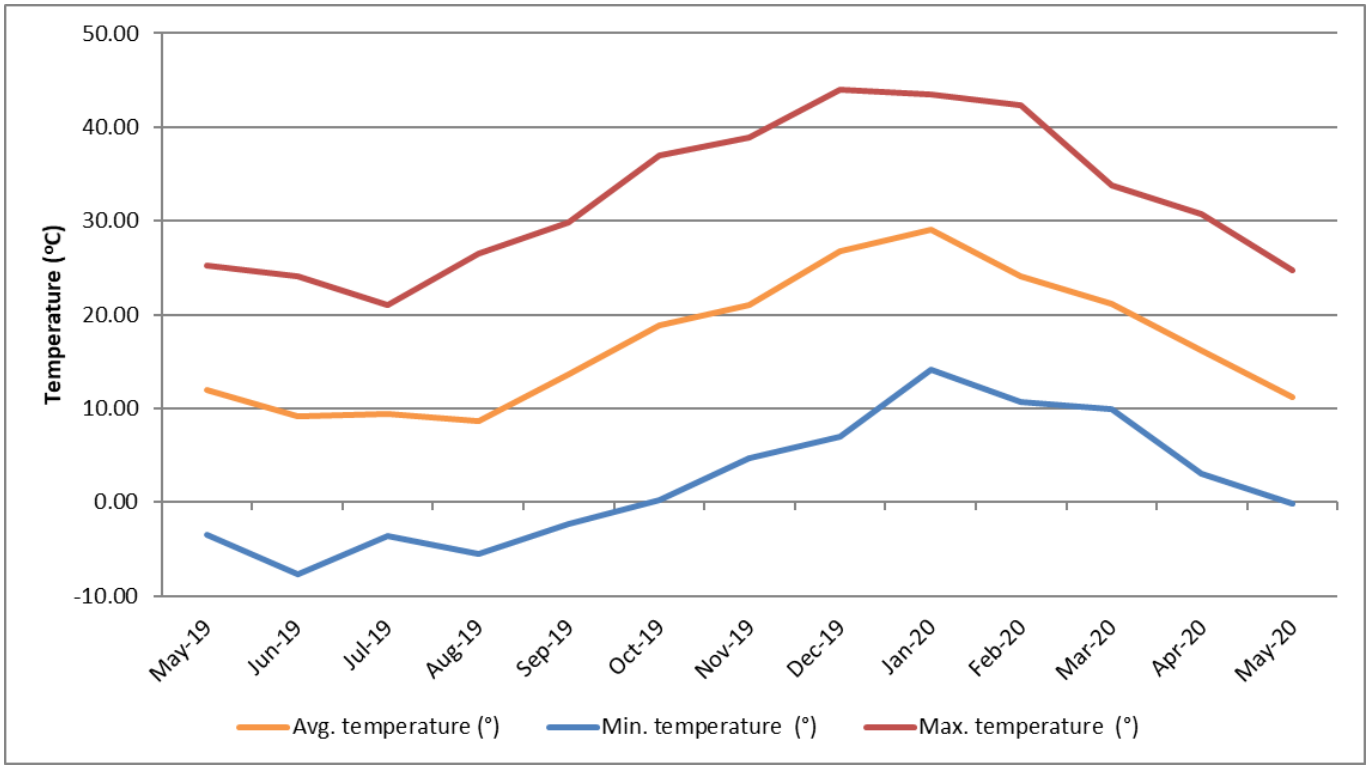


Figure 6 Temperature Summary for the Reporting Period

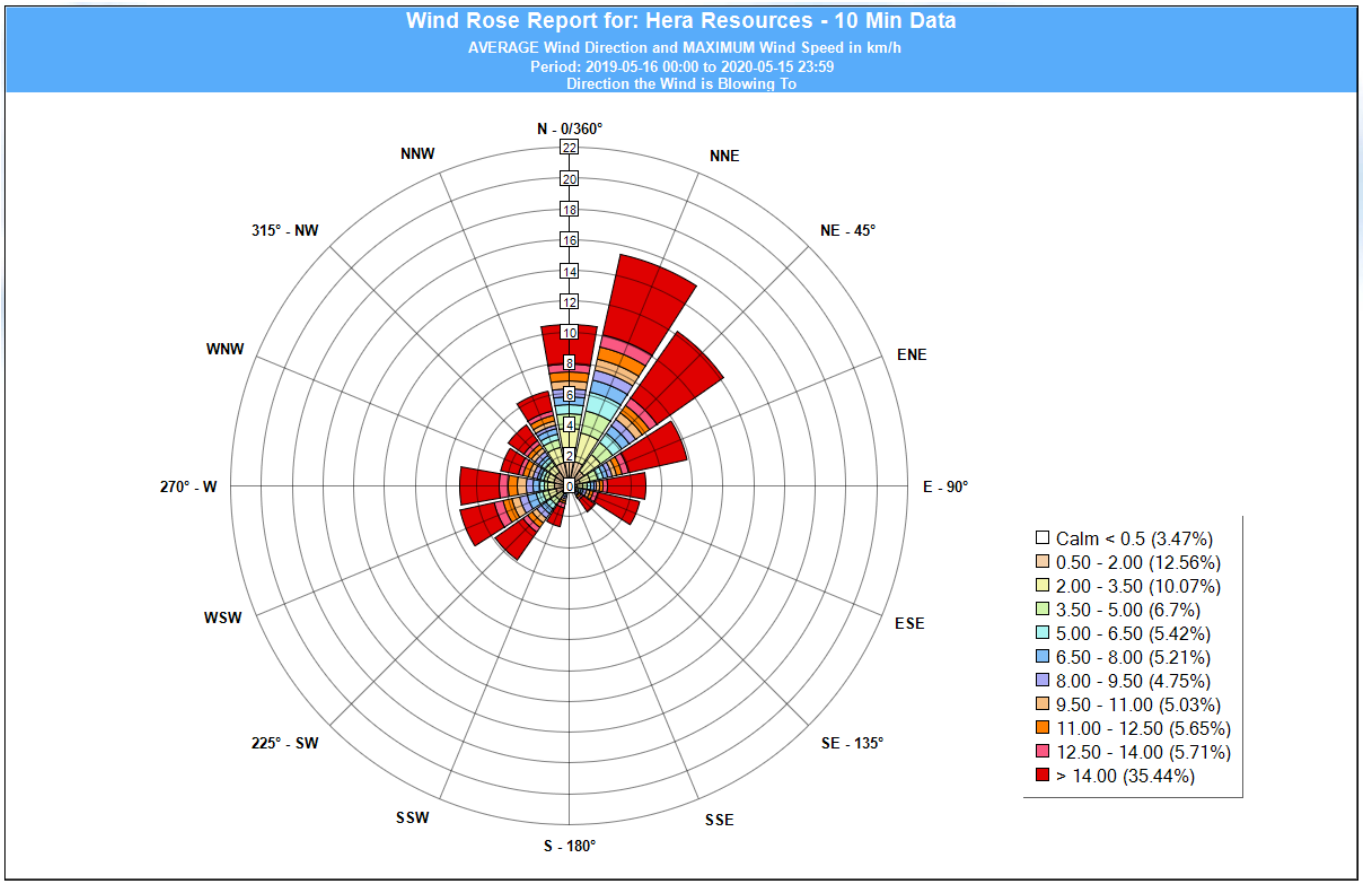


Figure 7 Wind Rose Report for Hera (16 May 2019 to 15 May 2020)

6.2 Air Quality and Greenhouse Gas

6.2.1 Environmental Management

Management of air quality and greenhouse gas is undertaken in accordance with the *Air Quality and Greenhouse Gas Management Plan*. Hera operates the following air quality monitors:

- DDG1 – Depositional dust gauges monitoring deposited dust at the nearest receptor (R3). Dust is monitored continuously and reset on a 30 ± 2 day cycle;
- DDG2 - Depositional dust gauges monitoring deposited dust at the nearest receptors (R1/R2). Dust is monitored continuously and reset on a 30 ± 2 day cycle;
- HVAS – High Volume Air Sampler (HVAS) used to monitor particulate matter less than 10 microns in diameter (PM_{10}) and Total Suspended Particulates (TSP). Located adjacent to the mine camp and operates over a 24-hour period, every sixth day; and
- S1 and S2 – Stack monitoring locations, used to monitor gas emissions from the two gold room furnace stacks (EPL Points 24 and 39). Emissions are monitored annually for nitric oxide concentrations (mg/m^3) and in accordance with *Protection of the Environment (Clean Air) Regulation 2010*.

The location of air quality monitoring locations and surrounding receptors are shown on **Figure 5**. The criteria for deposited dust, TSP and PM_{10} are provided in **Table 11**. Standard of concentration Group 6 – *Protection of the Environment Operations (Clean Air) Regulation 2010* limits for the pollutant Nitric Oxide are shown in **Table 12**. Monitoring of greenhouse gas emissions is undertaken in accordance with National Greenhouse and Energy Reporting (NGERs) monitoring and reporting requirements.

Table 11 Air Quality Monitoring Criteria

Pollutant	Averaging Period	[d] Criterion
Total Suspended Particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter ,10 µm (PM_{10})	24-hour	[a] 50 µg/m^3
	Annual	[a] 25 µg/m^3
[c] Deposited dust	Annual	[b] 2 g/m^2/month (maximum increase in deposited dust level)
	Annual	[a] 4 g/m^2/month (maximum total deposited dust level)

Notes
a Total impact (i.e. incremental increase in concentrations due to the operation plus background concentrations due to all other sources);
b Incremental impact (i.e. incremental increase in concentrations due to the operation on its own);
c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method; and
d Excludes extraordinary events such as bushfires, prescribed burning, dust storms sea fog, fire incidents or any other activity agreed by the Secretary.

Environmental management activities undertaken during the reporting period in relation to air quality included the following:

- Water trucks are operated on an average of twice per day (or as required) on unsealed roads and laydown areas to assist with dust control;
- Molasses has successfully been applied to most surface roads as a dust suppressant. Results have been extremely positive, and this will continue into the future;
- Water sprays are operated continuously throughout the processing plant to ensure that the required level of dust suppression is achieved;
- Vehicles are washed upon returning to the surface from the decline or before leaving site;
- Loaded vehicles are covered before leaving site;
- Disturbance is limited to the minimum area necessary for mining and associated activities;
- Disturbance areas are stabilised as soon as practicable after they are no longer required for mining-related purposes;

- All dust control equipment must be operable at all times with the exception of shutdowns required for maintenance;
- Regularly maintain and service equipment as per the manufacturer's specification to maximise efficiency;
- Speed limits are restricted to 40 km/hr on all internal access roads to minimise dust generation;
- Progressively review and implement energy efficiency measures throughout the life of the mine; and
- Utilising energy efficient equipment and implementing energy saving measures over the life of the mine.

6.2.2 Environmental Monitoring Results

6.2.2.1 Monitoring During the Reporting Period

Nitric Oxide

Standard of concentration Group 6 – *Protection of the Environment Operations (Clean Air) Regulation 2010* limits and stack monitoring results for the pollutant Nitric Oxide completed by Ektimo Pty Ltd on 3-4 December 2019 are shown in **Table 12**. Detected values are below limits.

Table 12 Stack Nitric Oxide Monitoring Criteria and Results

Emission Point	Units	Standard of Concentration (Group 6)	Detected values
EPA ID 24 - Gold Room Scrubber Stack	mg/m3	350	11
EPA ID 39 - New Gold Room Baghouse Stack	mg/m3		5.2

Depositional Dust Monitoring

Depositional dust monitoring results for the reporting period are shown in **Figure 8**.

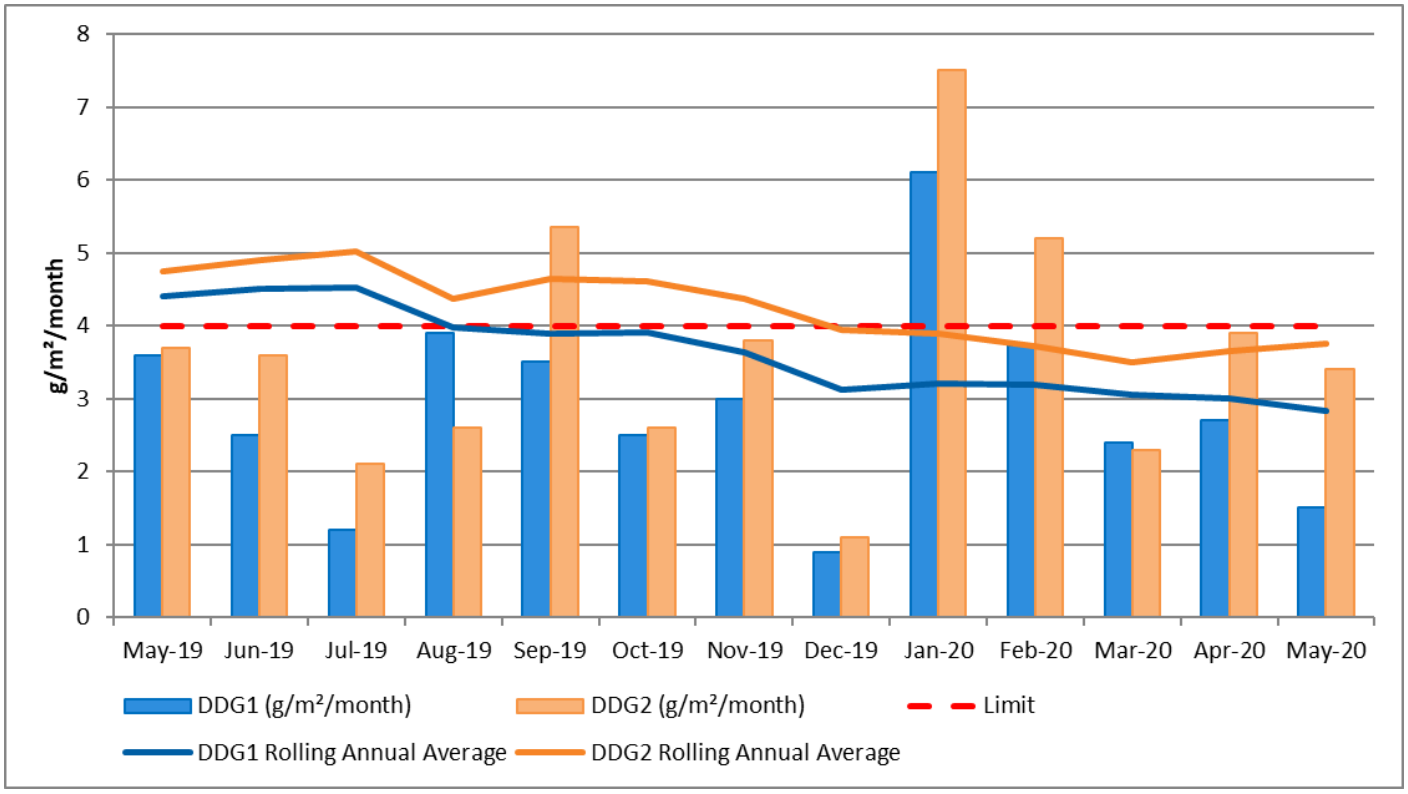


Figure 8 Dust deposition gauge results for the reporting period

Figure 8 shows that depositional dust monitoring results were elevated for the majority of the reporting period, particularly over the summer months. The 12-month rolling annual average for DDG2 and DDG1 was above the

criteria 7 times (May 2019-November 2019) and 3 times (May 2019-July 2019) respectively. A summary of the depositional dust monitoring results for the reporting period are provided in **Table 13.**

Table 13 2019-2020 Depositional Dust Monitoring Data

Monitor	Minimum (g/m^2/month)	Maximum (g/m^2/month)	Average (g/m^2/month)
DDG1	0.9	6.1	**2.83**
DDG2	1.1	7.5	**3.62**

As shown in **Table 13**, the Annual Review reporting period average depositional dust results were below the 4 g/m^2/month PA criteria at both monitors. This is despite the 12-month rolling average exceeding criteria for multiple months at the start of the reporting period.

HVAS Monitoring

A summary of the HVAS monitoring results for the reporting period is included in **Table 14**.

Table 14 2019-2020 HVAS Monitoring Data

Monitor	Minimum ($\mu g/m^3$)	Max ($\mu g/m^3$)	Average ($\mu g/m^3$)
TSP	0.01	446	71.44
PM_{10}	1	**135**	**25.60**

On ten occasions during the reporting period, the maximum PM_{10} exceeded the 50 $\mu g/m^3$ 24hr criteria. Additionally, the annual average PM_{10} result (25.6 $\mu g/m^3$) was slightly above the 25 $\mu g/m^3$ criteria. These exceedances were reported to the DPIE and EPA within the required 7-day notification period (refer **Section 11**). The 12-month rolling annual average for PM_{10} remained above the average annual limit throughout the whole reporting period. The exceedances are likely attributable to the background weather conditions (i.e. drought).

The annual average TSP result (71.44 $\mu g/m^3$) was within the 90$\mu g/m^3$ criteria. The 12-month rolling annual average for TSP was above the criteria from January to March, inclusive. There is no 24hr criteria for TSP.

The 24hr PM_{10} results for the reporting period, as well as the EA prediction (for receptor R6), the 24hr PM_{10} limit (PA 10_0191 Schedule 3, Condition 12), rolling annual averages for PM_{10} and TSP are presented in **Figure 9**.

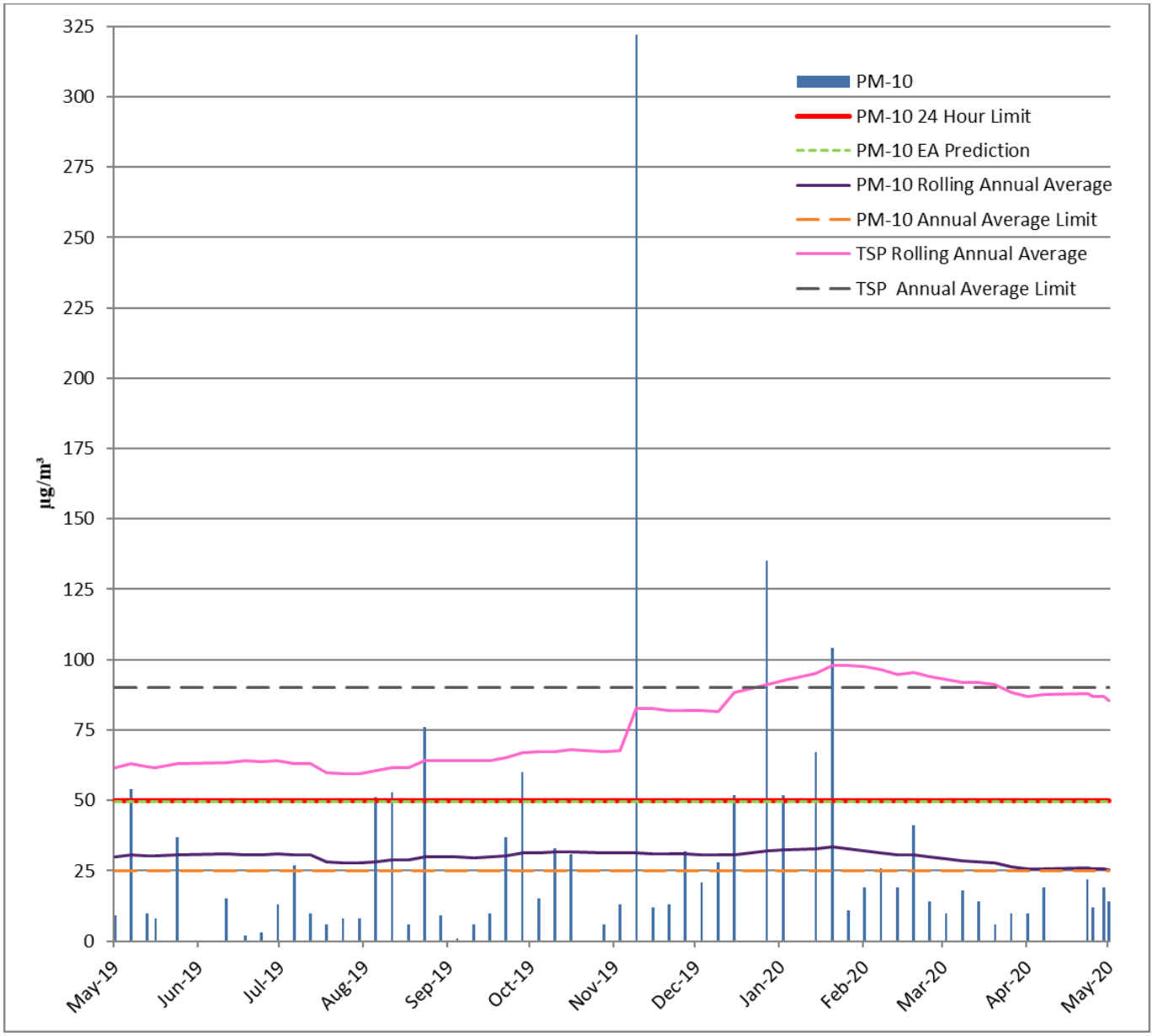


Figure 9 HVAS 24hr PM10 Results for the Reporting Period

As shown in **Figure 9**, the 24hr PM_{10} results showed a general trend of elevated results over the spring and summer period. The elevated reading of 322 µg/m^3 on 22 November 2019 was attributed to an extraordinary dust storm recorded across the region. This result has been removed from annual averages and rolling average data in **Figure 9** due to the extraordinary dust storm at the time of sampling, as per PA 10_0191 Schedule 3, Condition 12. This removal was approved by DPIE on 28 February 2020, the result will still be acknowledged in Hera's Annual Review and in CCC minutes. All elevated results are likely due to background climatic conditions, as surface operations at Hera have remained generally unchanged over this period.

6.2.2.2 Long Term Monitoring

Depositional Dust Monitoring

Figure 10 presents the annual average depositional dust results from the 2014-2015 to the 2019-2020 Annual Review period. The EA predictions for the Mine have also been included in this figure, with the prediction for DDG1 corresponding to R6 and the prediction for DDG2 corresponding to R1 / R2.

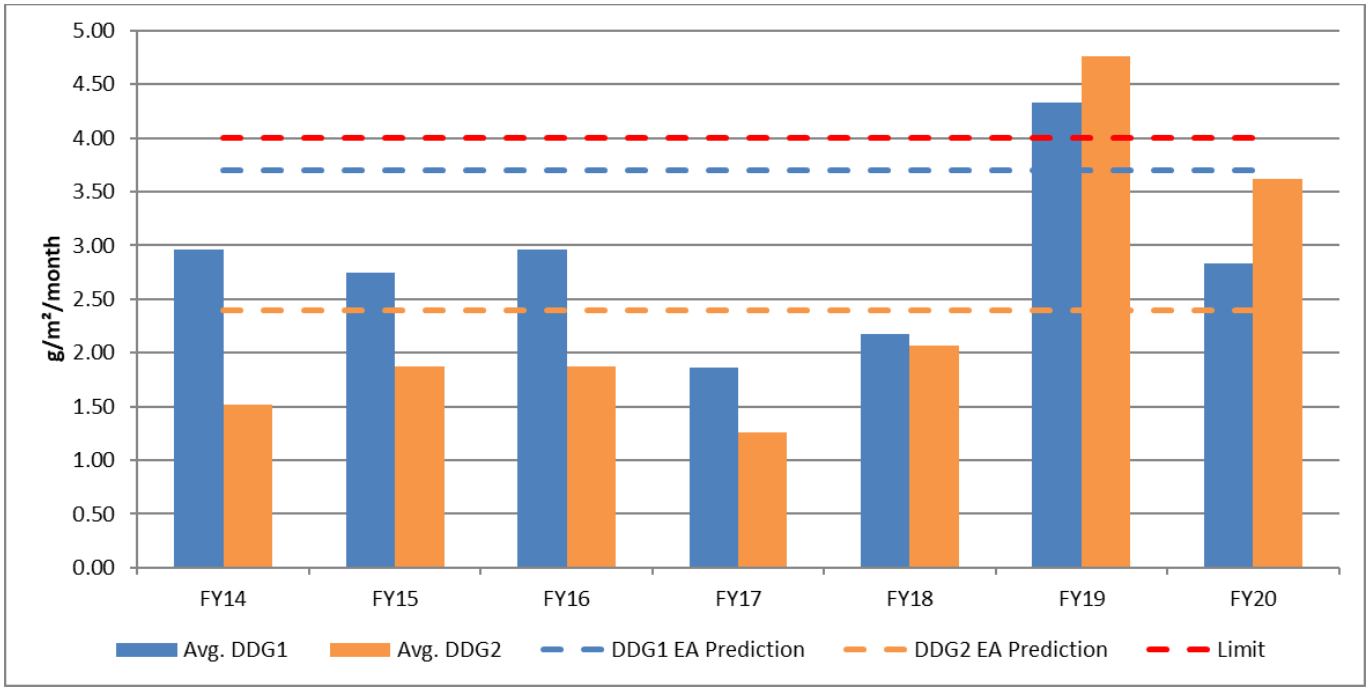


Figure 10 Average Dust Deposition Results 2014 to 2020

As shown in **Figure 10**, depositional dust results have generally been within the Project Approval limit, with the exception of the 2018-2019 reporting period for both DDG1 and DDG2 and 2019-2020 reporting period for DDG2 only. This is likely attributed to the prolonged drought conditions being experienced in far western NSW (refer **Section 6.1**). Similarly, results have been within the Environmental Assessment (EA) predictions with the exception of the 2018-2019 and 2019-2020 reporting periods.

HVAS Monitoring

Figure 11 presents the TSP annual averages from 2014-2015 to 2019-2020, as well as the EA annual average TSP prediction (for receptor R6) and PA annual average TSP criteria (PA 10_0191 Schedule 3, Condition 12).

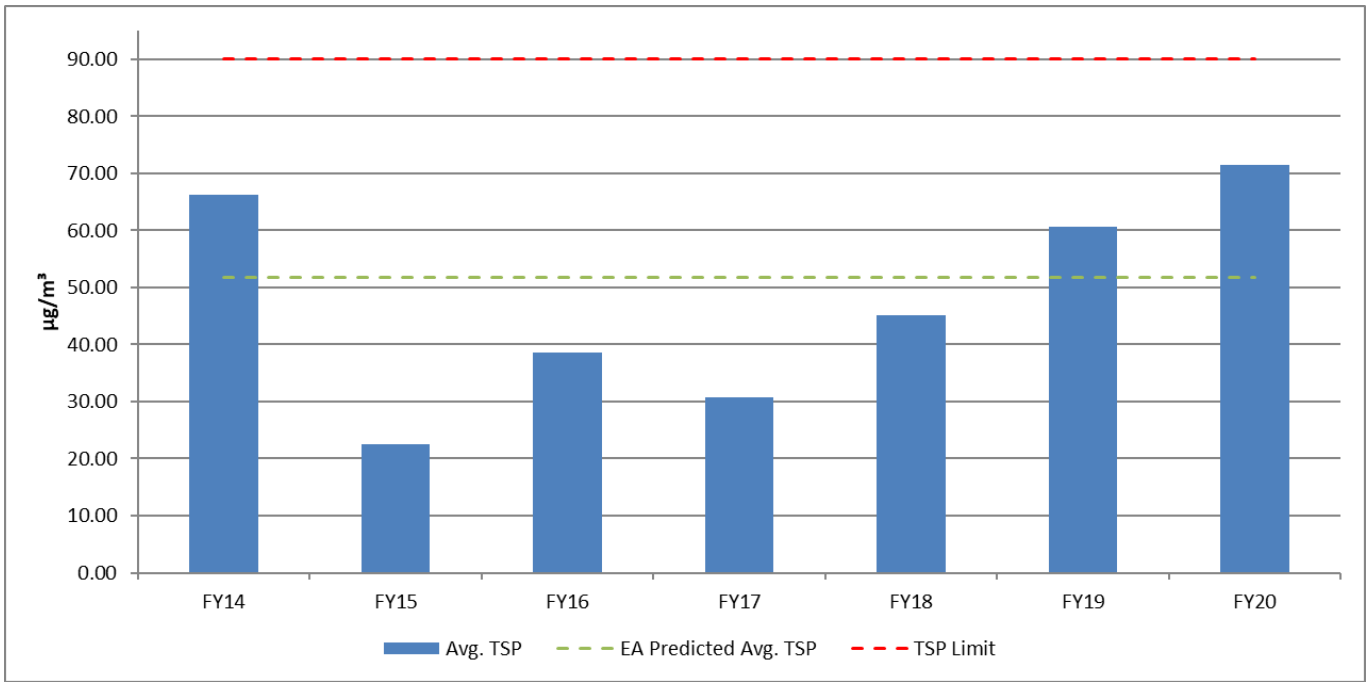


Figure 11 TSP Long Term Annual Averages

As shown in **Figure 11**, TSP results have been generally increasing since the 2014-2015 reporting period and exceeded the EA prediction in both the 2018-2019 and 2019-2020 reporting periods. However, all results have been below the annual average PA TSP criteria. These elevated results are likely due to background climatic conditions, as surface operations at Hera have remained generally unchanged over this period.

Figure 12 presents the PM_{10} annual averages from 2014-2015 to 2019-2020, as well as the EA annual average PM_{10} prediction (for receptor R6) and PA annual average PM_{10} criteria (PA 10_0191 Schedule 3, Condition 12).

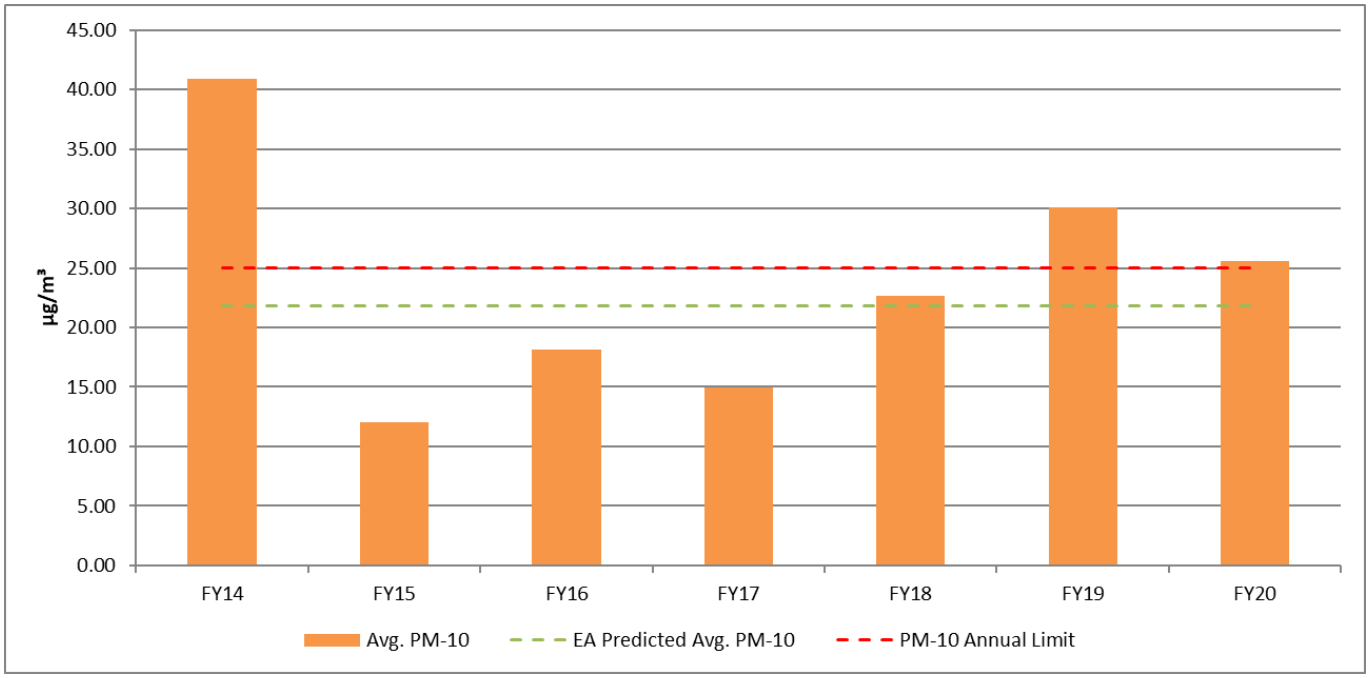


Figure 12 PM_{10} Long Term Annual Averages

As shown in **Figure 12**, PM_{10} results have been generally increasing since the 2014-2015 reporting period and exceeded the EA prediction in the last three reporting periods. However, all results have been below the annual average PA PM_{10} criteria, with the exception of the 2018-2019 and 2019-2020 reporting period.

Greenhouse Gas Emissions

A summary of greenhouse gas emission data against the EA predictions has been presented in **Table 15**. As the FY20 NGERs reporting has not yet been completed, the FY19 data has been included.

Table 15 2018-2019 NGERs Data

Data	Scope 1[a] (t CO2-e)	Scope 2[b] (t C)2-e)	Total (Scope 1 and 2)
EA Predictions	19,158	0	**19,158**
2018-2019 Data	22,577	18	**22,595**

a. Scope 1 emissions are the emissions released to the atmosphere from activities on site, e.g. fuel consumption (gas, diesel, etc.).
b. Scope 2 emissions are the emissions released from the indirect consumption of energy e.g. electricity purchased from the grid.

As shown in **Table 15**, the 2018-2019 data was 17.94% higher than the predictions made in the EA.

6.2.3 Performance Issues and Proposed Improvements

During the reporting period there were ten exceedances of the PA 10_0191 24-hour criteria at the HVAS (PM_{10}). These exceedances were reported to the DPIE and EPA who have acknowledged drought conditions as the cause.

The elevated results have been attributed to ongoing drought conditions (refer **Section 6.1**). In response, Hera has continued to use molasses as dust suppression on access roads, and water sprays on ore transfer points within the crushing circuit.

In response to the 2019 Independent Environmental Audit, Hera is investigating the placement of additional Dust Deposition Gauges outside the mine site boundaries with the assistance of an Air Quality Consultant, this is due to be completed by 31 December 2020. It is hoped to validate and verify dust related exceedances are background related and not caused by ongoing operations.

6.3 Erosion and Sediment

6.3.1 Environmental Management

Erosion and sediment control for the reporting period was undertaken in accordance with the *Hera Mine Water Management Plan*. Management measures implemented during the reporting period included the following:

- Dig permits are required before any ground is broken;
- Disturbance areas are stabilised following disturbance;
- Stockpiles are shaped to reduce batter slope and length;
- Inspections of all site water storages and drainage lines are conducted once per quarter or after heavy rainfall events (> 25 mm in 24-hours); and
- All contaminated and dirty water storages are desilted as required.

6.3.2 Environmental Monitoring Results

Inspections of all mine water storages and drainage lines occurred after receiving > 25 mm in 24-hours on the following dates:

- 3 November 2019 53.2mm;
- 9 February 2020 42.6mm;
- 5 March 2020 33mm;
- 3 April 2020 63.6mm;
- 10 April 2020 29.6mm; and
- 30 April 2020 48.2mm.

No further action was required after inspections were undertaken.

6.3.3 Performance Issues and Proposed Improvements

There were no erosion and sediment incidents during the reporting period. No changes to erosion and sediment control at Hera are proposed for the following reporting period.

6.4 Contaminated Polluted Land and Hazardous Materials

6.4.1 Environmental Management

Contaminated and/or polluted land at the Mine is managed in accordance with the *Hazardous Materials Management Plan*. Management measures implemented during the reporting period included the following:

- Hazardous, non-combustible and contaminated waste material is temporarily stored in the Workshop Waste Management Area, in sealed steel or plastic drums and shipped off-site for appropriate disposal or recycling;
- Any hazardous materials are stored and handled in accordance with the relevant guidelines. Storage facilities are clearly labelled, and are regularly inspected and maintained;
- Hydrocarbon storages are bunded, any runoff from wash bays is captured and treated, and storages are regularly inspected;

- Any 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;
- SDS are located with any substance posing a risk to people and/or the environment;
- All relevant personnel are trained in the handling of hazardous materials and the use of appropriate personal protective equipment (PPE);
- Appropriate PPE, spill kits and SDS' are made available to personnel responsible for the transportation, handling, storage, use and disposal of hazardous materials;
- Transportation of hazardous materials is undertaken by contractors who are certified to carry dangerous goods and have been trained in the Australian Code for the Transport of Dangerous Goods by Road and Rail using defined routes;
- 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
- Pollution incidents of land causing actual or potential material harm to the environment are reported to the relevant external regulators.

6.4.2 Environmental Monitoring Results

No monitoring was required during the reporting period.

6.4.3 Performance Issues and Proposed Improvements

A hydrocarbon incident occurred on 25 April 2020 whereby a hydrocarbon spill was seen on ground surface near the Pybar fuel bay. Site personnel investigated and surmised the hydrocarbon source was due to the fuel bay sump overflowing following heavy rainfall. No potential or observed impacts occurred as the spill was contained within a limited area in the disturbance footprint. The matter was promptly rectified, and training was carried out by relevant staff. Bioremediation is being investigated and will be undertaken to treat hydrocarbon contaminated material. The EPA are still being consulted to date.

No changes to contaminated and/or polluted land management at Hera are proposed for the following reporting period.

6.5 Threatened Flora and Fauna

6.5.1 Environmental Management

Threatened flora and fauna at the Mine are managed in accordance with the *Biodiversity Management Plan*. Management measures undertaken included:

- Pre-clearance surveys are undertaken prior to any vegetation clearing;
- Vegetation clearing is undertaken in accordance with the protocols outlined in the Biodiversity Management Plan;
- Enhancement of fauna habitat at suitable locations on the Mine Site;
- Bushfire management; and
- Hera has progressed with updates to the Biodiversity Management Plan including a Stewardship Agreement (previously known as Biodiversity Offset Strategies) for the Chelsea Property. It is anticipated that the Biodiversity Management Plan and Stewardship Agreement will be submitted for consultation during the following reporting period. This will be determined following consultation with EES, DoI Crown Lands and DPIE.

Biodiversity monitoring is undertaken annually across 13 locations within the Project Approval area, and at seven locations at the Chelsea Property. The ecological monitoring locations within the Project Approval area are shown on **Figure 5**.

6.5.2 Environmental Monitoring Results

A biodiversity monitoring survey was undertaken by Area Environmental Consultants & Communication (2020) in November 2019. The results are summarised below:

- Assessment of 13 monitoring points at the site identified 55 flora species, of which 48 are native species and seven are exotic species;
- Assessment of six of the seven monitoring points at the Chelsea Property identified 24 flora species, of which 21 were native species and three were exotic species;
- Flora results were in line with the last few years at both Hera and Chelsea Property, which has shown less diversity in monitoring results. Monitoring Point 13 is in a fenced area (excludes goat and sheep grazing but not kangaroos) and recorded the highest species diversity of the 13 sites. A severe drought is believed to be the primary factor responsible for the reduced number of lower stratum species compared to previous years. Drought has also taken its toll on both the mid- and upper- stratum species with the death of mostly Cypress pine trees, but also Eremophila and Eucalypt species. Loss of Cypress pine is beneficial to habitat structure as trees naturally thin out over time;
- Fauna observations were similar to the past few years at the mine site. At the Chelsea property there were fewer observations than reported in previous years, however this decline was not considered significant. An overall downward trend is visible in the total fauna species seen since 2010 however this was noted to be likely linked to a decline in rainfall since 2010 rather than an increase in disturbance;
- No Landscape Function Analysis was completed in 2019; and
- Overall the Nymagee area was considered to be harsh and the monitoring results reflect the environments capacity to provide resources depending on volume and frequency of rainfall.

6.5.3 Performance Issues and Proposed Improvements

There were no flora or fauna related incidents during the reporting period. A number of recommendations were made from the 2019 biodiversity monitoring survey. These recommendations will be implemented in future reporting period/monitoring events (dependent on the easing of the ongoing drought conditions):

- Continue feral animal control monitoring (Goats, pigs, foxes, cats and rabbits);
- Undertake / maintain feral animal control (Goats, pigs, foxes);
- Undertake White Cypress Pine thinning;
- Include additional fauna / flora monitoring points in areas where White Cypress Pine thinning takes place (mechanically or by fire);
- Include additional fauna / flora monitoring points / Landscape Function Analysis points in areas being rehabilitated;
- From 2019 onwards, alter vegetation plot monitoring methods to align with the Biodiversity Assessment Method 2017 which is the current NSW Government process for assessing biodiversity in an objective and repeatable way;
- Maintain set fauna monitoring sites and fauna search areas around free-standing water bodies and Tailing Storage Facility – targeting amphibian / waterbird points;
- Small standard mammal sampling should be continued at the Chelsea BOA annually;
- Establish reptile search areas;
- Continue the established photo monitoring protocol;
- Re-introduce Landscape Function Analysis once management actions are in place; and
- While trapping didn't occur at the Chelsea Biodiversity Offset Area (BOA) site in 2019 it is recommended that small mammal traps and bat echolocation recording occurs at Chelsea in 2020.

6.6 Weed and Pest Management

6.6.1 Environmental Management

Weed and pest management at the Mine is undertaken in accordance with the *Biodiversity Management Plan*. Management measures undertaken included:

- Feral animal management undertaken as required, including goat removal, cat trapping, fox baiting, and rabbit baiting and/or warren ripping;
- Vehicles are washed down on a regular basis to prevent weed spread; and
- Weed spraying is conducted as required. Weeds targeted during the reporting period included Bathurst Burr.

6.6.2 Environmental Monitoring Results

The 2019 biodiversity monitoring survey (refer **Section 6.5**) also identified weed and pest species at the Hera site and Chelsea Property. The monitoring results identified five feral animal species at the Hera site:

- Goat (*Capra hircus*);
- Pig (*Sus scrofa*);
- Rabbit (*Oryctolagus cuniculus*);
- Fox (*Vulpes vulpes*); and
- Cat (*Felix catus*).

The same five feral animal species were recorded in the previous year's monitoring survey.

The 2019 biodiversity monitoring results recorded seven exotic species at the Hera site and three species at the Chelsea property. The 2018 results were lower, with only two exotic species being recorded at the Chelsea property. This indicated the weed burden was decreasing across the Hera site, likely in response to drought.

6.6.3 Performance Issues and Proposed Improvements

There were no weed or pest related incidents during the reporting period. No changes to weed management at Hera are proposed for the following reporting period.

6.7 Blasting

6.7.1 Environmental Management

Blast activities at the Mine are managed in accordance with the *Blast Management Plan*. Management measures undertaken included:

- Surface blasting will be undertaken only between the hours of 9:00am to 5:00pm, Monday to Saturday except for emergency or safety-related reasons;
- Above ground blasting operations will not exceed three blasts per day, unless an additional blast is required following a blast misfire, with no more than five blasts per week, averaged over a calendar year;
- Appropriate signage and notification of blasts will be provided to the public;
- All blasts will be designed by a suitably qualified and experienced person/s to achieve compliance with criteria and to minimise the potential for fly-rock;
- Surface blasting will be avoided in strong wind conditions;
- The time between drilling and loading will be minimised to reduce blast hole deterioration; and
- Moisture content will be minimized within blast holes to reduce potential fumes.

Blast vibration and overpressure are recorded for all blasts. The blast vibration and overpressure criteria from PA10_0191 and EPL 20179 are provided in **Table 16**.

Table 16 Blast Criteria

Location	Time Period	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance
Residence on privately-owned land	Any time	120	10	0%
	Day[1]	115	5	5% of total blasts over a period of 12 months
	Evening[2]	-	2	5% of total blasts over a period of 12 months
	Night[3] and all day on Sundays and public holidays	-	1	0%

1. Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays.
2. Evening is defined as the period from 6pm to 10pm.
3. Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

6.7.2 Environmental Monitoring Results

6.7.2.1 Monitoring During the Reporting Period

555 blasts were initiated during the reporting period. One blast exceeded the airblast overpressure criteria. On 2 November 2019 at 19:09:29 in the evening, one blast was recorded as having an airblast overpressure of 132.0 db at the Harris Residence, the recorded airblast overpressure at the Nymagee Township for the same blast was only 111.4 db. Further details are discussed in Section **6.7.3**.All other blasts were within PA 10_0191 (Schedule 3, Condition 4) and EPL 20179 (Condition L5.1) limits. A summary of results is provided in **Table 17.**

Table 17 Blast Monitoring Results Summary

Parameter	Min	Max	Exceedances
Blast Vibration	0.05 mm/s	1.15 mm/s	0
Blast Overpressure	73.3 db	**132.0 db**	1

The blast overpressure and vibration results for the reporting period, against the applicable criteria, are presented in **Figure 13, Figure 14**, **Figure 15** and **Figure 16**.

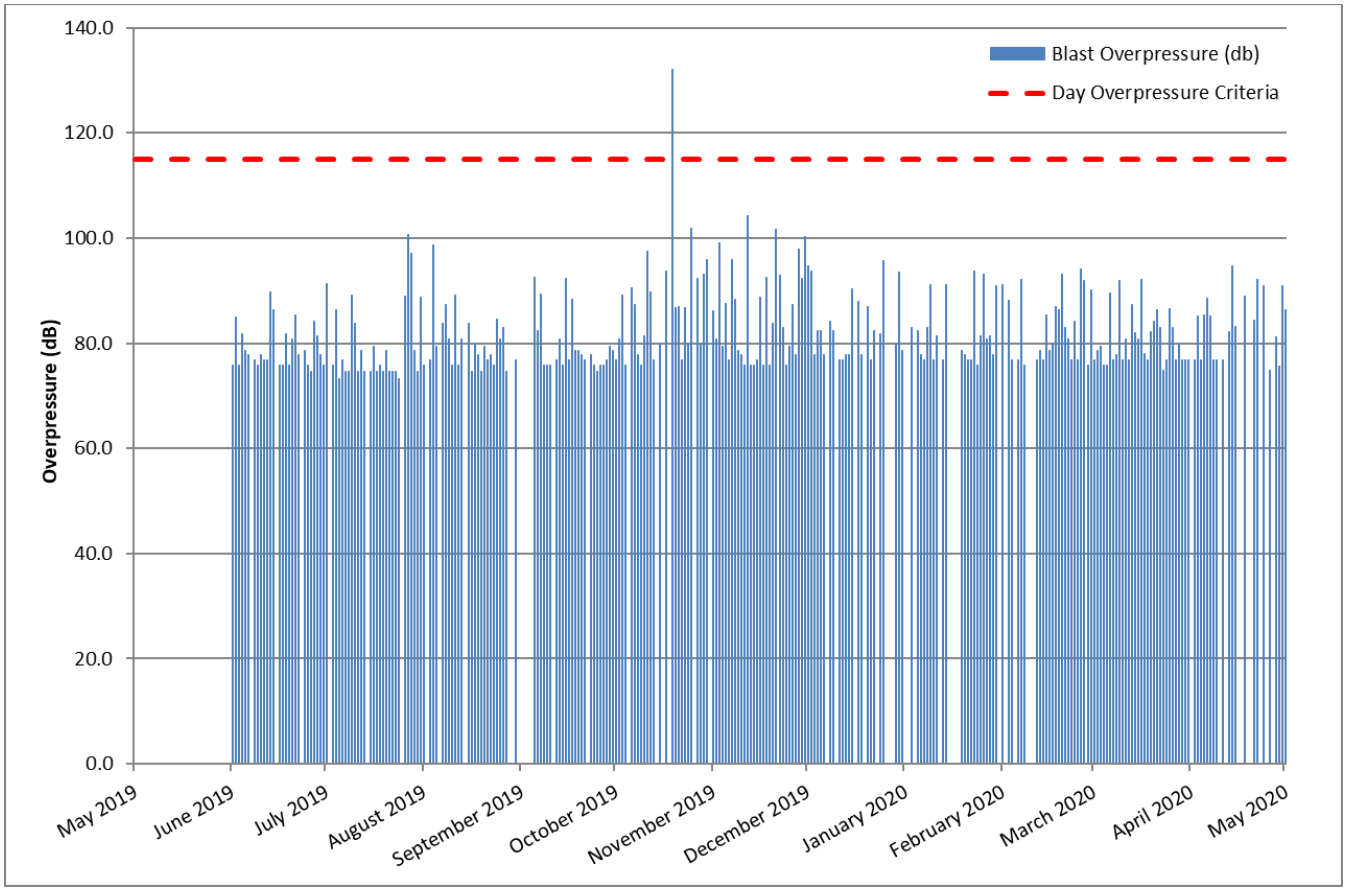


Figure 13 2019-20 Blast Overpressure Monitoring Results

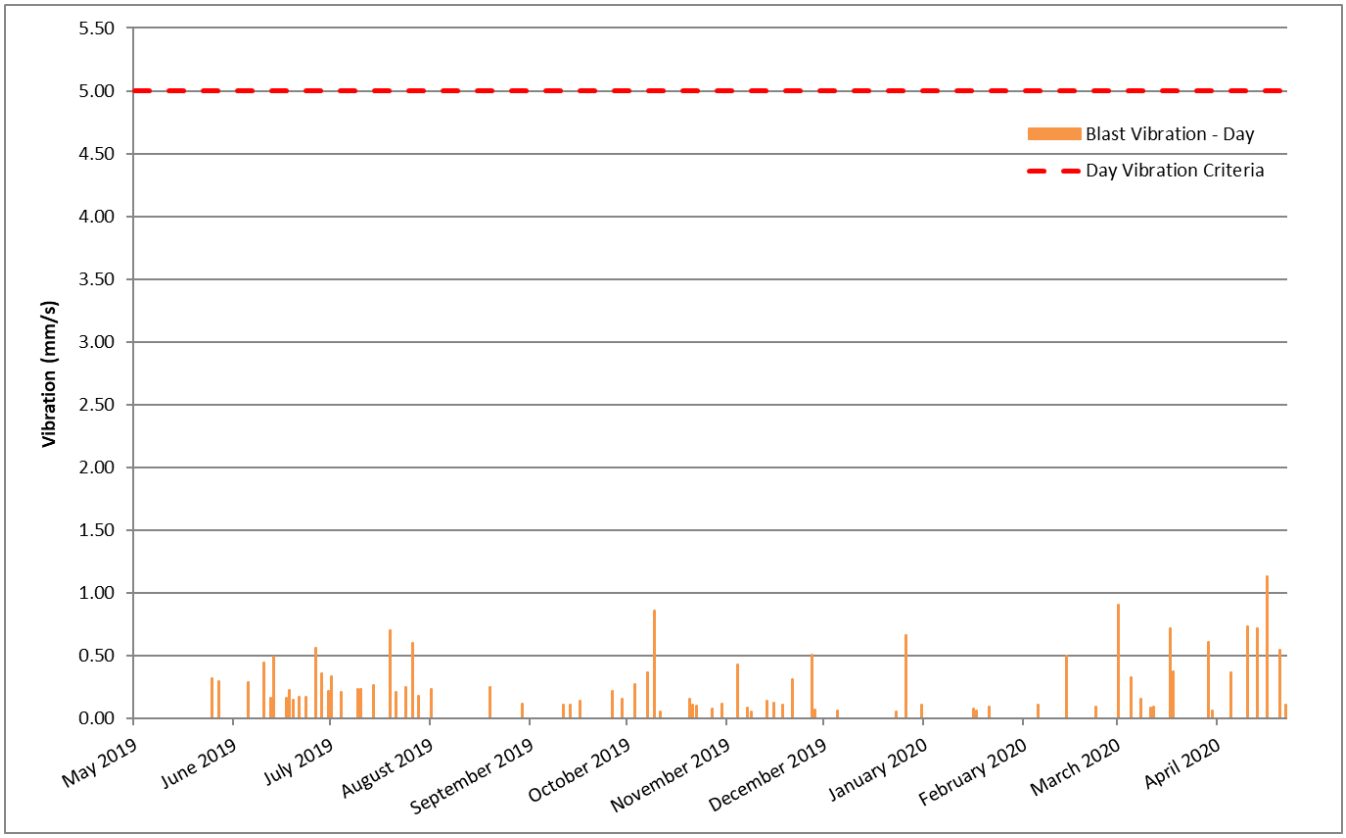


Figure 14 2019-20 Blast Vibration Monitoring Results (Day)

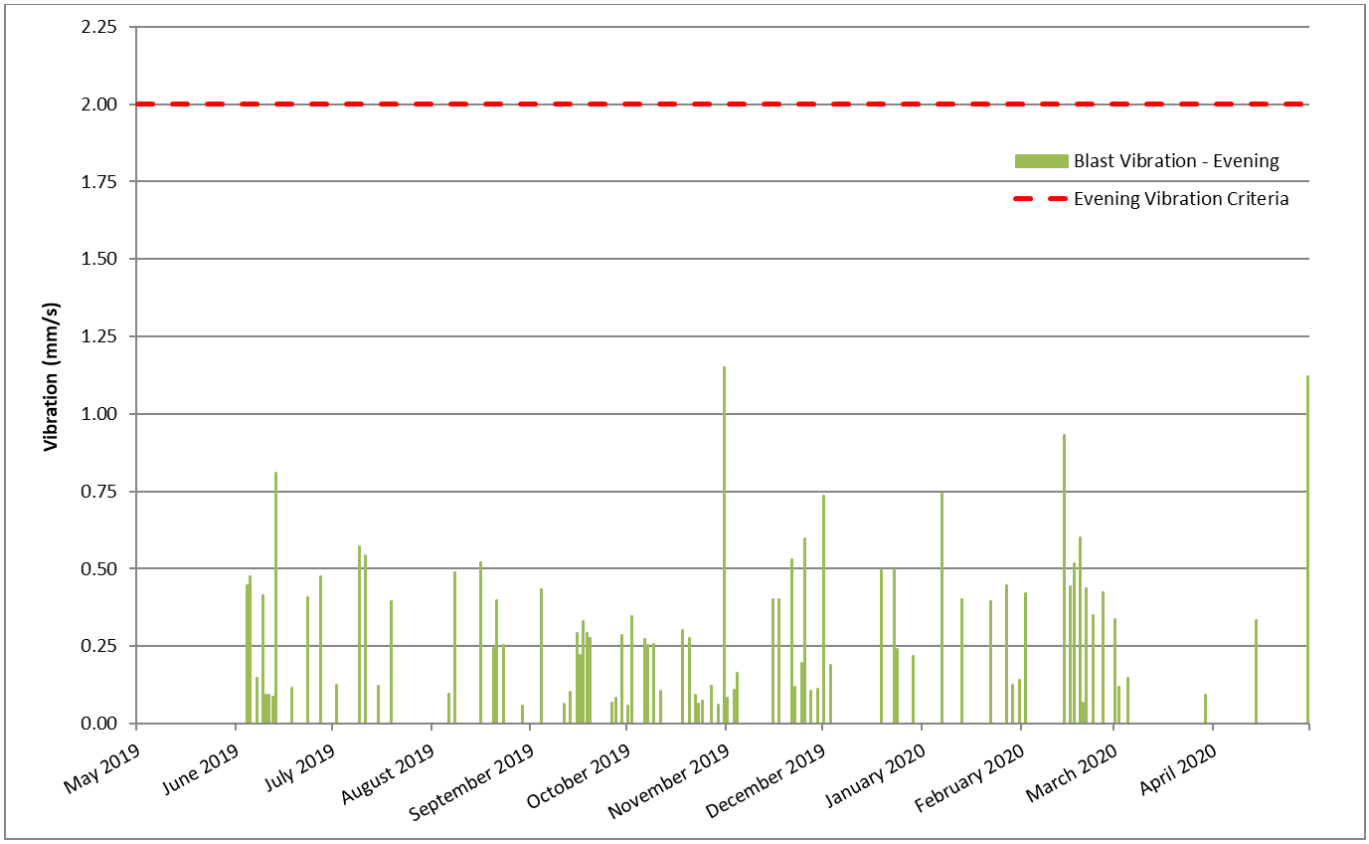


Figure 15 2019-20 Blast Vibration Monitoring Results (Evening)

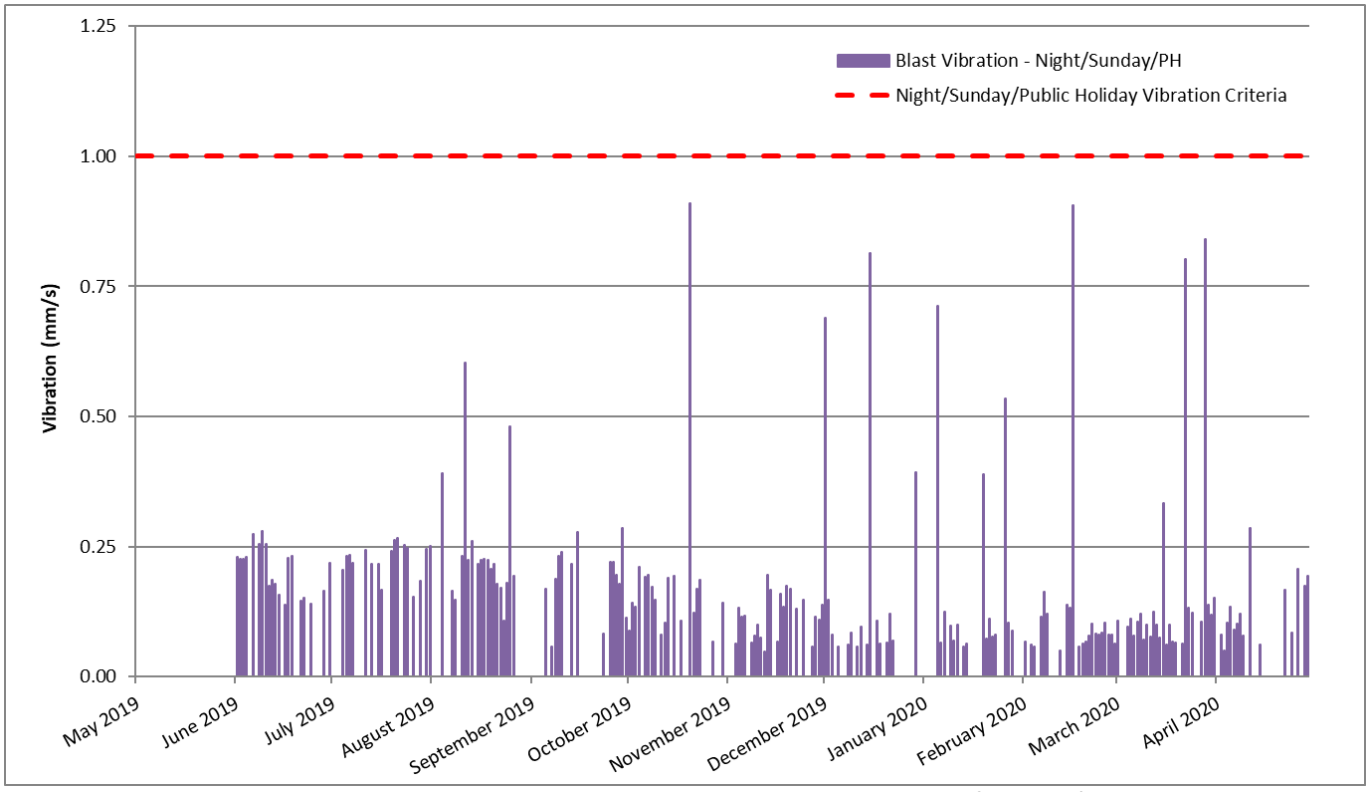


Figure 16 2019-20 Blast Vibration Monitoring Results (Night/Sunday/PH)

6.7.2.2 Long Term Monitoring

Figure 17 presents a summary of the average annual blast vibration for the life of the mine (i.e. since 2013). The increasing trend evident from 2013-2014 to 2015-2016 is a result of the project transitioning from an underground development focus to an underground production focus (i.e. production blasting typically has greater maximum instantaneous charges than development blasting). The blast vibration reduced from 2015-2016 to 2017-2018, which was likely a result of the relocation of the blast monitor to the nearest residence on privately owned land. Results increased again during the 2018-2019 reporting period and held steady during the 2019-2020 reporting period.

The blasting assessment undertaken as part of the EA (Spectrum Acoustics, 2011) predicted that for receptor R3 (nearest receptor to the box cut) the peak vibration would be 0.1 mm/s. Only 28.35% of blast vibration results were below this prediction during the 2019-2020 reporting period. Additionally, Spectrum Acoustics (2011) predicted that for receptor R3 that the peak blast overpressure would be 105 dB. All blast overpressure results during the reporting period, except for one, were below this prediction.

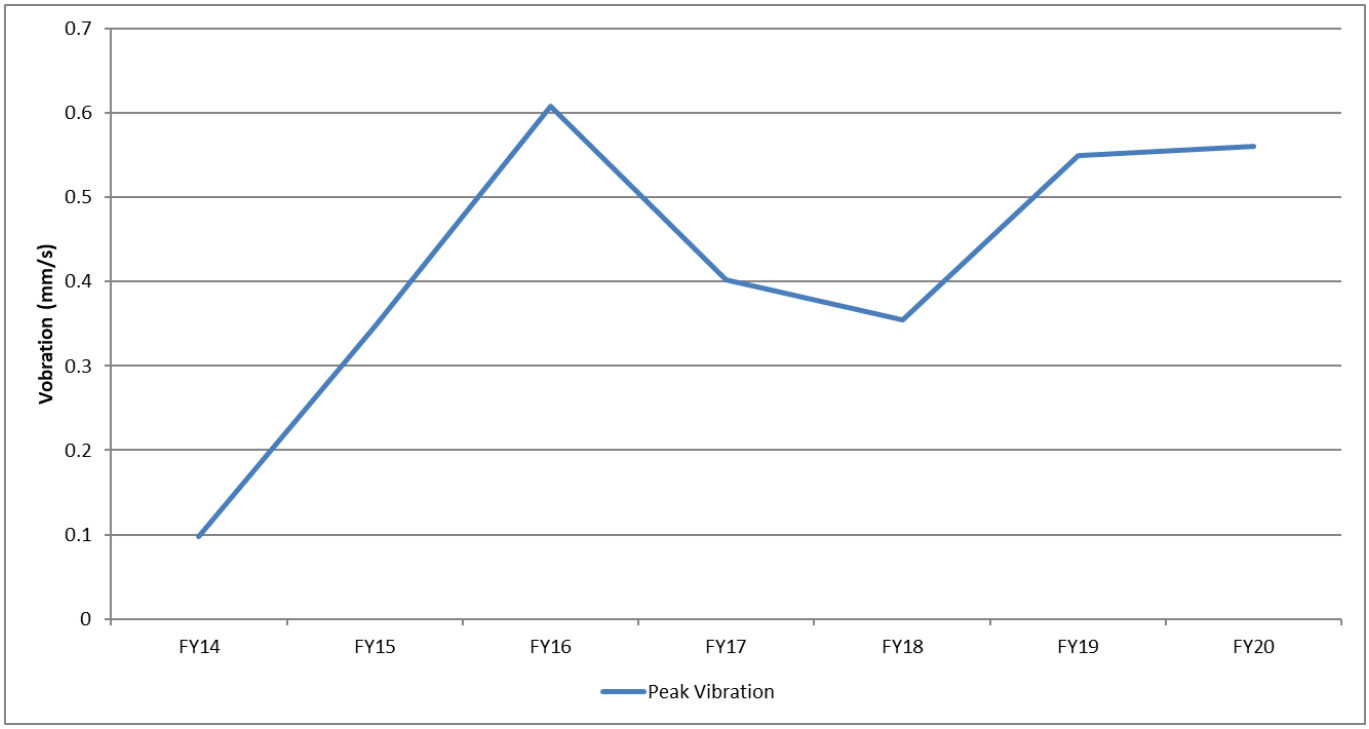


Figure 17 Summary of the Average Blast Vibration for the Life of the Hera Mine

6.7.3 Performance Issues and Proposed Improvements

As summarised in **Section 6.7.2.1**, on 2 November 2019 at 19:09:29 in the evening, one blast was recorded as having an airblast overpressure of 132.0 db at the Harris Residence, the recorded airblast overpressure at the Nymagee Township for the same blast was only 111.4 db. As the blast was 270m below surface this exceedance was caused likely by background meteorological conditions. The elevated overpressure observed would relate to the windspeed at the time of the vibration recording as it was averaging 16km/h with a peak wind gust of 30.8 km/h to the North-Northeast.

No changes to blast management at Hera are proposed for the following reporting period.

6.8 Operational Noise

6.8.1 Environmental Management

Operational noise at Hera is managed in accordance with the *Noise Management Plan*. Operational noise management activities during the reporting period included:

- Compliance with the approved hours of operation;
- Minimising the noise impacts of the operation during meteorological conditions when the PA 10_0191 noise limits do not apply;
- Regularly servicing all equipment on site to ensure sound power levels of each item remains at or below the default / or factory-set values;
- Reducing operational noise where possible by applying strategies such as:
    - Utilising natural and artificial noise barriers (e.g. hay bales around exploration drill rigs);
    - Operation of individual plant/equipment;
    - Planning 'noisy' operations for suitable periods of the day;
    - Fitting plant/equipment with noise abatement devices where possible; and
    - Sourcing low frequency alarms.
- Ensuring that all blasts are designed by a suitably qualified and experienced blasting engineer or shot-firer and that each is designed to achieve the relevant noise criteria at the closest residence; and
- Maintaining an open dialogue with the surrounding community and neighbours to ensure any noise or vibrations concerns are addressed.

Noise monitoring is conducted at R1/R2, R3 and R4 (refer **Figure 5**). As there is no residence located at R3, the Company is in the process of having an agreement made with the new landowner that monitoring will continue to be undertaken (as it has been previously with previous landowners), however noise criteria does not apply. The PA 10_0191 and EPL 20179 criteria are presented in **Table 18.**

Table 18 Noise Criteria

Location	Day	Evening	Night	
	(LAeq(15-minute))	(LAeq(15-minute))	(LAeq(15-minute))	(LA1(1 minute))
All residential receivers	35 dB	35 dB	35 dB	45 dB

6.8.2 Environmental Monitoring Results

Attended noise monitoring was conducted by Muller Acoustic Consulting Pty Ltd (MAC) in December 2019 at receptors R1/R2, R3 and R4. **Table 19** includes this monitoring data, as well as the EA predictions, and the PA 10_0191 and EPL 20179 criteria. No exceedances of noise criteria were recorded during the 2019-2020 reporting period. All results were also below the EA predictions.

Table 19 Summary of attended noise monitoring results conducted by EMM on 19 and 20 September 2018

Receiver	Date	Time	LAeq Limit	LA Max Limit (dB)	LAeq Site Contribution (dB)	LA Max Site Contribution (dB)	LAeq EA Prediction (dB)	LA Max EA Prediction (dB)
R1-R2 (NM1)	04/12/2019	13:23	35	n/a	Inaudible	n/a	<20	30
R3 (NM2)	04/12/2019	14:02	35	n/a	Inaudible	n/a	26	40
R4 (NM3)	04/12/2019	14:28	35	n/a	Inaudible	n/a	<20	35
R1-R2 (NM1)	04/12/2019	20:34	35	n/a	Inaudible	n/a	<20	30

R3 (NM2)	04/12/2019	20:59	35	n/a	20	22	26	40
R4 (NM3)	04/12/2019	21:21	35	n/a	<25	<25	<20	35
R1-R2 (NM1)	04/12/2019	22:00	35	45	Inaudible	n/a	<20	30
R3 (NM2)	04/12/2019	22:26	35	45	24	26	26	40
R4 (NM3)	04/12/2019	22:46	35	45	<24	<24	<20	35

The results were comparable to the two previous reporting period, which also recorded no exceedances of noise criteria.

6.8.3 Performance Issues and Proposed Improvements

There were no noise related incidents during the reporting period. No changes to noise management at Hera are proposed for the following reporting period.

6.9 Traffic Management

6.9.1 Environmental Management

Traffic management at Hera is managed in accordance with the *Traffic Management Plan,* which was updated during the reporting period to incorporate MOD 5 changes and is still waiting approval. Traffic management measures that are implemented at the site include:

- Heavy vehicles transporting concentrate use the main route when conditions allow, and the alternate route when required (e.g. during times of road closures following heavy rain or when more than eight truck movements per day averaged over a calendar month are required);
- Concentrate transport is restricted during times of rainfall to reduce damage to local roads;
- Implementation of a Driver's Code of Conduct;
- All plant and equipment used to transport materials from the site are maintained in a proper and efficient condition, and operated in a safe manner;
- Vegetation is managed so that sight distances on the road shoulder are maintained;
- A speed limit of 40 km/hr applies to the Main Site Access Road, Light Vehicle Access Road and roads around the leases, and a speed limit of 30 km/hr applies to all areas within the mine site; and
- All vehicles travelling on public roads are required to abide by the local speed limits ensuring they slow down to 50 km/hr while travelling through the Nymagee, Cobar and Hermidale townships.

The PA 10_0191 limits for transport of concentrate are:

- Transport of no more than 60,000 t of lead/zinc concentrate per calendar year;
- Transportation of lead and zinc concentrate and gold doré from the site – daylight hours, 7 days per week; and
- No more than eight vehicle movements (entering and leaving the site) per day, averaged over a calendar month.

6.9.2 Environmental Monitoring Results

In accordance with PA 10_0191, Schedule 3, Condition 37, Hera is required to maintain records of all concentrate trucks arriving and departing from the site including the date, time, amount of concentrate transported and average number of vehicle movements per day. A summary of these records is provided in **Table 20** below.

Table 20 Monthly Volumes of Concentrate Transported

Month	Tonnes of Concentrate Transported	Average Vehicle Movements Per Day
January 2019	2969.90	2.00
February 2019	1652.11	1.21
March 2019	1883.35	1.26
April 2019	2236.97	1.63
May 2019	2099.37	1.42
June 2019	1,837.86	2.92
July 2019	2,183.70	3.75
August 2019	2,994.52	4.77
September 2019	5,401.82	5.29
October 2019	3,112.72	3.37
November 2019	3,853.21	4.44
December 2019	2,922.79	3.53
Total	**33,148.33**	-

The transport of concentrate in the 2019 calendar year reporting period (33,148.33 t) was within the PA 10_0191 approved calendar year limit of 50,000tpa before MOD 5 approval, and the number of vehicle movements was less than eight per day (monthly average). Additionally, all truck movements were within the approved transport hours.

6.9.3 Performance Issues and Proposed Improvements

There were no traffic related incidents during the reporting period.

6.10 Heritage

6.10.1 Environmental Management

Aboriginal heritage at the Mine is managed in accordance with the *Heritage Management Plan* (HMP), which was updated during the reporting period to incorporate MOD 5 changes and was approved on 13 July 2020. Non-Aboriginal heritage is managed as required. The following management measures are implemented for the management of unexpected heritage finds:

- All employees and contractors to Hera receive heritage training during site inductions;
- Ground disturbance permits are required when breaking ground and part of this process involves inspecting the site for heritage items;
- If any suspected Aboriginal or non-Aboriginal heritage sites, artefacts or spiritual places are found during ground clearing construction activities or mining, all work in the vicinity will cease immediately, and the unexpected finds procedure in the HMP will be implemented. The relevant agencies and Aboriginal stakeholders will be notified if required; and
- Activities will not recommence in the area of the find, until the relevant stakeholders have inspected the site and permission has been given to continue with the activity.

6.10.2 Environmental Monitoring Results

No heritage monitoring was required during the reporting period. Additionally, no unexpected finds were encountered during the reporting period.

6.10.3 Performance Issues and Proposed Improvements

There were no heritage related incidents during the reporting period. No changes to heritage management at Hera are proposed for the following reporting period.

6.11 Visual, Stray Light

6.11.1 Environmental Management

Visual, stray light at the Mine is managed as required. The relative isolation of the Mine from surrounding residential locations and public vantage points, such as major roads, combined with the fact that topography and native vegetation limits the visibility of Hera, results in negligible visual/lighting impacts from the site. Notwithstanding, the following measures were implemented during the reporting period:

- Natural screening (e.g. trees) are not removed unless required; and
- Placement, intensity, and direction of lighting on the site are selected to reduce nuisance light.

6.11.2 Environmental Monitoring Results

No environmental monitoring for visual or lighting was required during the reporting period.

6.11.3 Performance Issues and Proposed Improvements

There were no visual or lighting related incidents during the reporting period. No changes to visual and lighting management at Hera are proposed for the following reporting period.

6.12 Bushfire

6.12.1 Environmental Management

Bushfire management at the site is managed as required. The following management measures are implemented for the management of bushfires at Hera:

- Fire breaks are maintained around the infrastructure and boundary fencing;
- A hot work permit is required for any work involving heat and/or naked flame;
- A Job Safety and Environment Analysis (JSEA) procedure is implemented to assess hazards in each step of a task, to establish suitable controls to manage identified hazards and appropriate tools, equipment, permits, PPE and reference documents required;
- Correct and safe storage of flammable and combustible fuels, chemicals and materials;
- Site-wide restriction on smoking and carrying of flame initiating devices;
- Deployment of suitably trained and experienced Site Emergency Response Team; and
- Established links and protocols with nearby Cobar emergency response teams.

6.12.2 Environmental Monitoring Results

No environmental monitoring for bushfires was required during the reporting period.

6.12.3 Performance Issues and Proposed Improvements

There were no bushfire related incidents during the reporting period. No changes to bushfire management at Hera are proposed for the following reporting period.

6.13 Public Safety

6.13.1 Environmental Management

Public safety is managed at Hera as required. The following measures are implemented for the management of public safety at Hera:

- Perimeter fencing with gated entrances and warning signage has been installed as barrier to prevent Public access to the Mine;
- Provision of swipe card access for the main entrance to the Mine;
- Entry restrictions apply to all persons under the age of 16 years;

- The Mill Control Centre is manned 24 hours a day, seven days a week; and
- Induction procedures are required for visitors to site.

6.13.2 Environmental Monitoring Results

No safety related monitoring was required during the reporting period.

6.13.3 Performance Issues and Proposed Improvements

There were no public safety related incidents during the reporting period. No changes to public safety management at Hera are proposed for the following reporting period.

7 Water Management

7.1 Water Management

Water management for the reporting period was undertaken in accordance with the Hera Mine *Water Management Plan.* Water management details for the reporting period are summarised in **Table 21.**

Table 21 Water Management Details for the Reporting Period

Water Type	Storage	Volumes held (ML)			Usage
		Start of Reporting Period 16 May 2019	End of Reporting Period 15 May 2020	Storage Capacity (ML)	
Clean Water	Pete's Dam	0.5	0.8	3.2	Transferred to Process Water Dam as required.
	Back Dam East	0.0	4.0	108	
	Back Dam	0.5	3.0	6.5	
	Three Gates Dam	0.0	0.0	3.6	
	House Dam	0.01	0.5	2.0	Use in exploration drilling.
	Total	**0.51**	**8.3**	**123.3**	
Raw Water	Back Tank	0.1	0.1	0.1	Receives raw water from WB8, back bore and WB21.
	Three Gates Tank	0.1	0.1	0.1	Receives raw water from WB24 and WB25.
	House Tank	0.02	0.02	0.02	Storage point from House Bore for use in exploration drilling.
	Feed Water Tank	0.2	0.24	0.24	Water Treatment Plant and underground Header Tank.
	Header Tank	0.1	0.1	0.1	Transfer underground.
	Total	**0.52**	**0.56**	**0.56**	
Contaminated water	Process Water Dam	4.25	4.25	5.3	Central source for Process Plant.
	Tailings Decant Pond	1.0	0.5	134.0	Decant water back into process system.
	Tailings Seepage Pond	0.0	0.0	1.8	Captures runoff from the TSF embankment, as well as providing protection of environment. Intercepted water is pumped to the TSF as required.
	WREA Leachate Dam	0.0	0.0	0.75	Protection of environment, seepage back into process system
	Expanded Sediment Basin	0.0	0.0	9.0	Captures dirty water runoff from Hera disturbance footprint.
	Total	**5.25**	**4.75**	**150.85**	

As shown in **Table 21**, the clean water dams and contaminated water dams are well below capacity, which is attributed to the ongoing drought conditions (refer **Section 6.1**).

7.2 Surface Water Pollution

7.2.1 Environmental Management

Surface water at Hera is managed in accordance with the *Hera Mine Water Management Plan*. The surface water environment at Hera consists of four main water types; clean, raw, dirty, and contaminated water:

- **Clean water** includes runoff generated within undisturbed catchment areas within and upslope of the site. Water from clean water storages is transferred to the Process Water Dam for industrial use on-site;
- **Raw water** is used for operational purposes and is generally clean. Raw water at Hera is supplied from production bores around the site;
- **Dirty water** is defined as runoff from the disturbed footprint that has not come into contact with pollutants such as arsenic or cyanide. The dirty water management systems consist of a series of dirty water drains. There dirty water storage onsite at Hera is the Sediment Basin; and
- **Contaminated Water** is categorised by the increased likelihood of elevated concentrations of cyanide and arsenic. There is no active treatment of this water with all captured volumes reused in process activities.

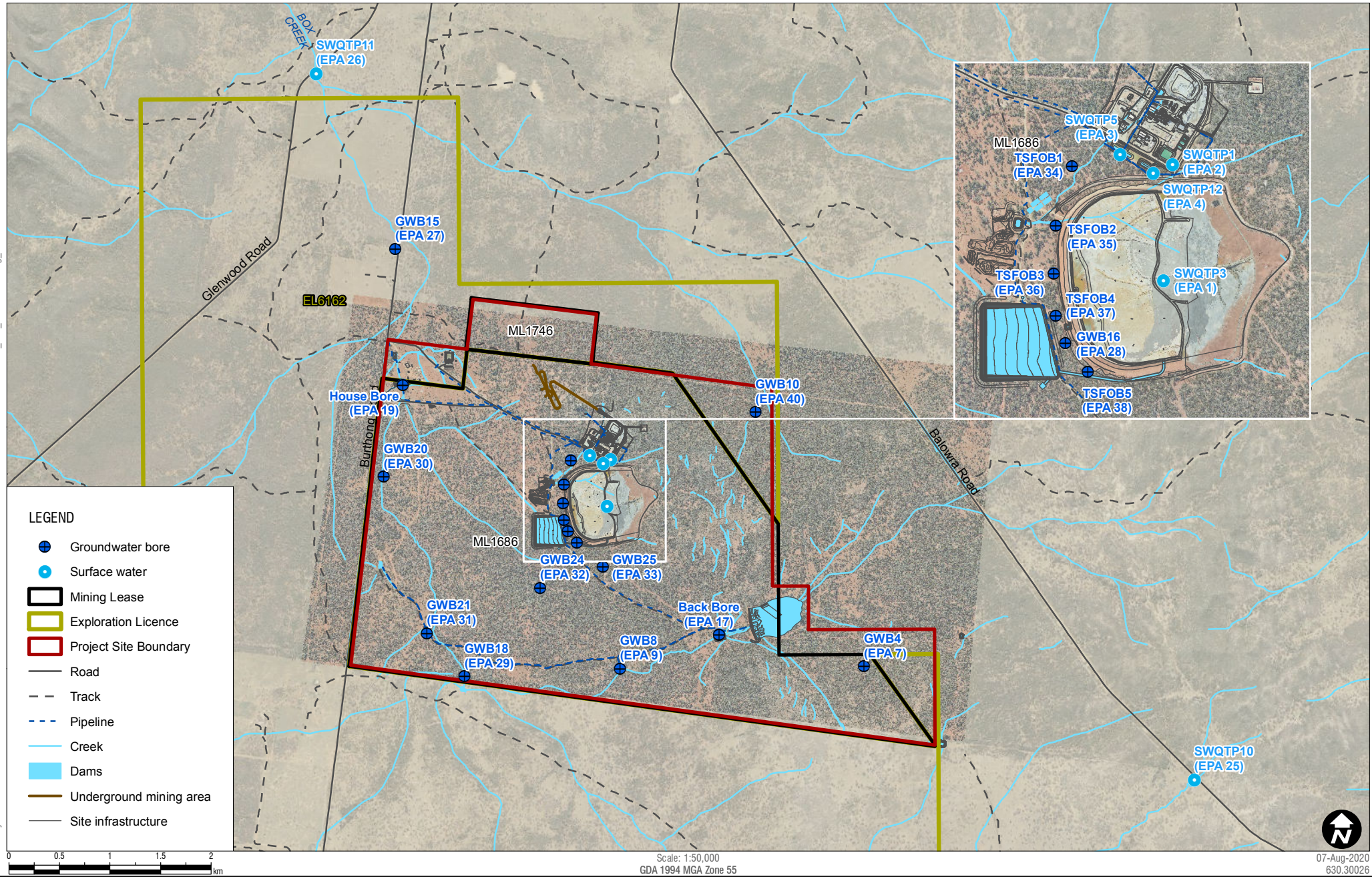
A summary of surface water management activities during the reporting period are summarised below:

- Fuels and oils are stored in purpose-built facilities with appropriate bunding to minimise the potential for accidental discharging of hydrocarbons into the surrounding environment. Diesel is stored in above ground self-bunded tanks from where it is transferred direct to machinery. A licenced contractor is engaged to remove and recycle and/or dispose of used oil and grease products at licensed facilities;
- Once per quarter and after significant rainfall (> 25 mm in 24-hours), a site walkover and assessment of all surface water structures is undertaken; and
- Visual inspections of upstream and downstream waterways are undertaken at a number of locations in association with surface water quality monitoring to identify any instabilities that have formed as a result of the operations.

Hera undertakes surface water quality monitoring at several locations within the site (refer **Figure 18** and **Table 22**). EPL 20179 requires surface water quality sampling be undertaken at two locations within the contaminated water system (EPA point 1 and EPA point 2); one location within the dirty water system which is the Sediment Basin (EPA point 3 and EPA point 4); and two locations within the surrounding clean water system (EPA point 25 and EPA point 26). EPA point 3 and EPA point 4 are no longer in place and the Hera is a zero-discharge site. A request has been made to the EPA to remove these discharge points from EPL 20179 however, no response has been received to date.

Table 22 Surface Water Monitoring Points

EPA Point No. and Location	Frequency	Parameters
EPA 1, Discharge to TSF	Daily during any discharge	Cyanide (weak acid dissociable)
EPA 2 Discharge to PWD		
EPA 3 Sediment Basin 1	During discharge	EC, pH, TSS, Cyanide (weak acid dissociable), Al, As, B, Cd, Cu, Pb, Mn, Ni, N (total), Oil and grease, Ag, Total P (filtered), Zn
EPA 4 Sediment Basin 2		
EPA 25 Surface Quality Monitoring Point (Upstream)	During discharge	EC, pH, TSS, Cyanide (weak acid dissociable), Al, As, B, Cd, Cu, Pb, Mn, Ni, N (total), Oil and grease, Ag, Total P (filtered), Zn
EPA 26 Surface Quality Monitoring Point (Downstream)		



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Water Monitoring Locations

FIGURE 18

7.2.2 Environmental Monitoring Results

During the reporting period there were no discharges from the sediment basin and no flows recorded in the clean water by pass drain through site. There were also no flows in any creeks or drainage courses across the site as a result of the extended drought. Therefore, no surface water monitoring of creeks or drainage lines was able to be undertaken.

Table 23 presents a summary of the monitoring results for EPA Points 1 and 2, which were monitored during the reporting period. Results are also reported to the EPA annually as part of the EPL Annual Return.

Table 23 Surface Water Monitoring Results

Monitoring Point	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	EPL Criteria (mg/L)
TSF Thickener Discharge (EPA Point 1)	0	0.14	6	10
Process Water Dam (EPA Point 2)	0	0.27	10	20

As shown in **Table 23**, there was no exceedance of the TSF Thickener Discharge Point and Process Water Dam criteria during the reporting period. These results are an improvement on the previous reporting periods, where one exceedance of the TSF Thickener Discharge point criteria occurred in 2018-2019 reporting period and five exceedances of the Process Water Dam criteria, and four exceedances of the TSF Thickener Discharge point criteria were recorded in 2017-2018 reporting period.

7.2.3 Performance Issues and Proposed Improvements

Two surface water-related incidents occurred during the reporting period, as outlined below:

- On 25, 26 and 27 March 2020, the WAD CN Levels were not sampled from the Process Water Dam. Further training was provided to the relevant staff following the incident. The incident was reported to DPIE, Resources Regulator, Cobar Shire Council and EPA and no further action has been undertaken to date; and
- Non-compliant transfer of contaminated water occurred when discharge of water from the WREA Leachate Pond was transferred to the Sediment Basin via an internal road spoon drain following heavy rainfall. The matter was promptly rectified, and re-training was carried out by relevant staff. The incident was reported to DPIE, Resources Regulator, Cobar Shire Council and EPA.

Proposed Improvements:
No additional changes from those discussed to water management onsite are proposed in the next reporting period.

7.3 Groundwater Pollution

7.3.1 Environmental Management

Groundwater at Hera is managed in accordance with the *Hera Mine Water Management Plan*. A summary of groundwater management activities during the reporting period are summarised below:

- Managing the TSF and process plant in accordance with the *Hazardous Materials Management Plan* to ensure no leaching of acid, heavy metals, or cyanide into groundwater;
- Managing the WREA in accordance with the *Waste Rock Management Plan* to ensure no leaching of acid and heavy metals from waste rock into groundwater; and
- Storing fuels and oils in purpose-built facilities with appropriate bunding to minimise the potential for accidental discharging of hydrocarbons into the surrounding environment. Diesel is stored in above ground self-bunded tanks from where it is transferred direct to machinery.

A Groundwater Monitoring Program is outlined in the *Water Management Plan* and includes monitoring of groundwater level and quality at the bores and frequencies listed in **Table 24**.

Table 24 Groundwater Monitoring Program

Location	Frequency	Parameter
EPL monitoring points		
WB4 (EPA 7), WB10 (EPA 40), Back Bore (EPA 17)	Quarterly	SWL
WB4 (EPA 7), WB8 (EPA 9), WB10 (EPA 10), Back Bore (EPA 17), House Bore (EPA 19)	Quarterly	EC, pH, TSS, As, HCO3, B, Cd, Ca, CO3, Cl, Cr, Cu, Cyanide (free, total & WAD), Fe, Pb, Mg, Hg, Mn, Mo, Ni, K, Ag, Na, Sb, Sn, Zn
TSF monitoring bores: TSFOB1, TSFOB2, TSFOB3, TSFOB4, TSFOB5, WB16	Quarterly (sample when water is present)	SWL, EC, pH, TSS, As, HCO3, B, Cd, Ca, CO3, Cl, Cr, Cu, Cyanide (free, total & WAD), Fe, Pb, Mg, Hg, Mn, Mo, Ni, K, Ag, Na, Sb, Sn, Zn
Additional monitoring		
WB4, WB15, WB18, WB20	Monthly	SWL
TSF monitoring bores: TSFOB1, TSFOB2, TSFOB3, TSFOB4, TSFOB5, WB16	Monthly (sample when water is present)	SWL, EC, pH, TSS, As, HCO3, B, Cd, Ca, CO3, Cl, Cr, Cu, Cyanide (free, total & WAD), Fe, Pb, Mg, Hg, Mn, Mo, Ni, K, Ag, Na, Sb, Sn, Zn

7.3.2 Environmental Monitoring Results

7.3.2.1 Monitoring During the Reporting Period

Groundwater Monitoring

Quarterly standing water levels, pH and Electrical Conductivity (EC) results for the reporting period are summarised in **Table 25** below. TSFOB01, TSFOB02, TSFOB03, TSFOB04 and TSFOB05 were dry at every monitoring period.

Table 25 Groundwater Monitoring Results

Monitoring Point	Month	Depth to Water (m)	pH	EC (mS)
WB4	June 2019	53.54	7.0	7.50
	September 2019	- *	-	-
	December 2019	53.55	6.8	3.20
	March 2020	53.54	6.8	5.02
WB15	June 2019	56.56	6.9	6.51
	September 2019	56.91	6.8	6.29
	December 2019	57.15	7.0	4.67
	March 2020	57.55	6.8	4.76
WB18	June 2019	68.23	7.4	3.57
	September 2019	68.52	7.3	2.22
	December 2019	69.35	- #	- #
	March 2020	70.01	- #	- #
WB20	June 2019	60.98	7.0	8.17
	September 2019	61.21	7.2	7.23
	December 2019	61.39	7.1	5.07
	March 2020	62.33	7.6	5.84

** Blocked due to tree roots at 53.53m, lost hydro sleeves and weight at 70m*

 # Blocked, no sample

Water Take

A summary of the water taken by Hera during the previous water year (i.e. 1 July 2019 – 30 June 2020) is provided in **Table 26**.

Table 26 Water Take

Water Licence	Water sharing plan, source and management zone	Entitlement	Passive take/ inflows	Active pumping	TOTAL
WAL 43173	Lachlan Fold Belt Murray Darling Basin Groundwater Source (Aquifer)	543 ML/year	230.28 ML	123.42 ML	353.7 ML

A total of 353.7 ML of groundwater was extracted from the bores, which was well within the 543 ML limit. A summary of water extraction per bore during the reporting period is provided in **Table 27.**

Table 27 Groundwater Extraction Per Bore

Bore	Volume (ML)	Pumped/Passive
Back Bore	0.0	Pumped
House Bore	3.81	Pumped
Nymagee Bore	19.61	Pumped
WB 8	36.32	Pumped
WB 10	0.96	Pumped
WB 17	0.77	Pumped
WB 21	27.42	Pumped
WB 24	10.69	Pumped
WB 25	12.37	Pumped
WB 26	2.11	Pumped
WB 27	2.55	Pumped
WB 28	6.81	Pumped
Decline	230.28	Passive
Total	**353.70**	-

Table 28 presents a summary of water usage onsite and a comparison to the water balance. Water usage is reduced onsite where possible and bore water usage is minimised. Underground mine dewatering water is recycled and re-used underground as make-up water, excess underground mine dewatering water flows into the Process Water Dam for use in the process plant. Bore water is used for creation of potable water, dust suppression, pump gland water and underground make-up water (minimised where possible).

Table 28 Summary of Water Flows Onsite and Comparison to the Water Balance

Date	Rainfall (mm)		Underground Make Up Water Demand (ML)		Underground Mine Water Excess (ML)		Ablutions Demand (ML)	
	Actual	Water Balance Prediction	Actual	Water Balance Prediction	Actual	Water Balance Prediction	Actual	Water Balance Prediction
May-19	1.6	30	14.4	1.4	13.0	6.4	2.2	0.5
Jun-19	15.8	30	12.8	1.4	6.3	6.4	2.2	0.5
Jul-19	15.2	30	11.0	1.4	14.2	6.4	2.1	0.5
Aug-19	6.0	30	10.0	1.4	14.2	6.4	1.8	0.5
Sep-19	5.0	30	11.2	1.4	11.9	6.4	2.1	0.5
Oct-19	2.0	30	9.4	1.4	14.2	6.4	2.0	0.5
Nov-19	54.0	30	8.8	1.4	12.2	6.4	1.7	0.5
Dec-19	2.6	30	9.5	1.4	10.1	6.4	2.3	0.5
Jan-20	6.2	30	8.1	1.4	10.6	6.4	2.2	0.5
Feb-20	56.2	30	6.3	1.4	6.2	6.4	2.1	0.5
Mar-20	49.6	30	8.5	1.4	6.8	6.4	1.7	0.5
Apr-20	151.6	30	9.6	1.4	8.4	6.4	1.8	0.5
Total	**365.8**	**360**	**119.4**	**16.8**	**128.0**	**77.1**	**24.3**	**6.0**
Difference (%)	**101.61 %**		**710.95 %**		**166.04 %**		**404.22 %**	

7.3.2.2 Long Term Monitoring

Figure 19 presents a summary of the standing water level results for the life of mine at Hera, which shows that standing water levels have remained relatively stable and only increased slightly over the last two years.

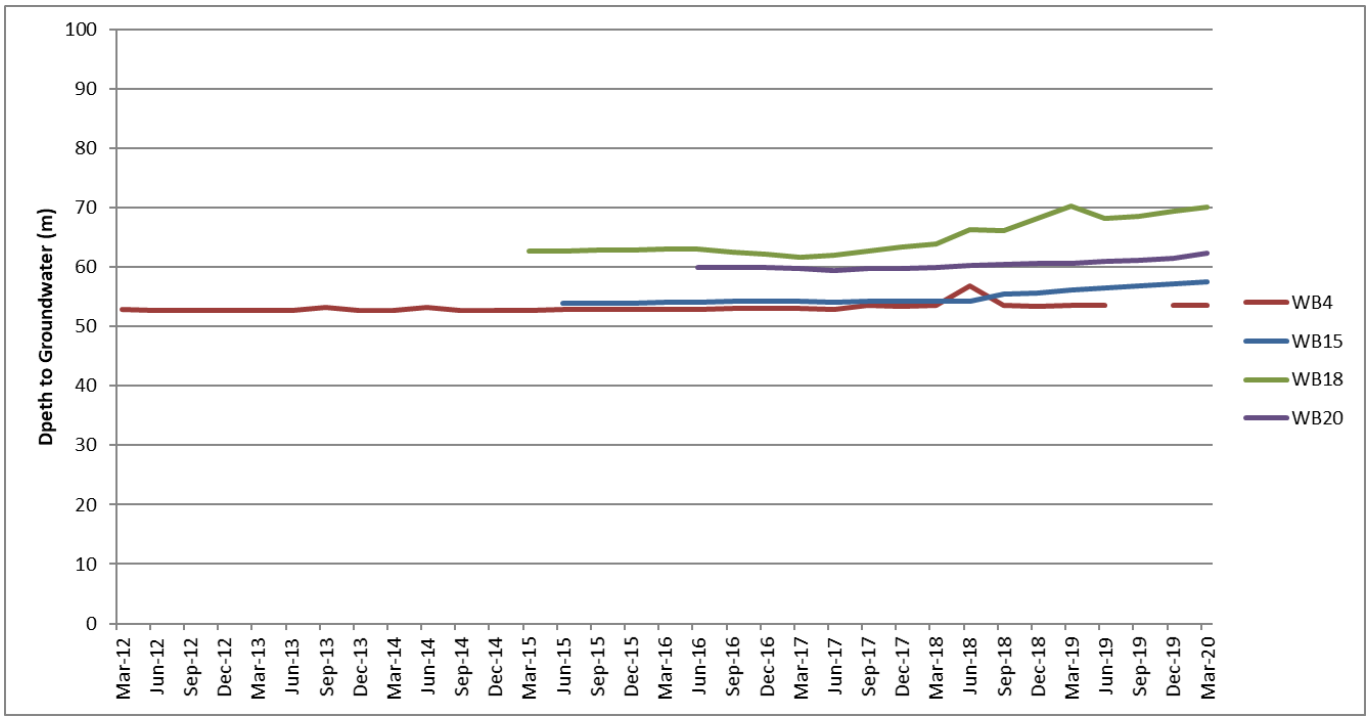


Figure 19 Summary of standing water levels for the life of mine at Hera Mine

Figure 20 and **Figure 21** present the groundwater pH and EC for the life of mine at Hera. The results are variable over the period of time.

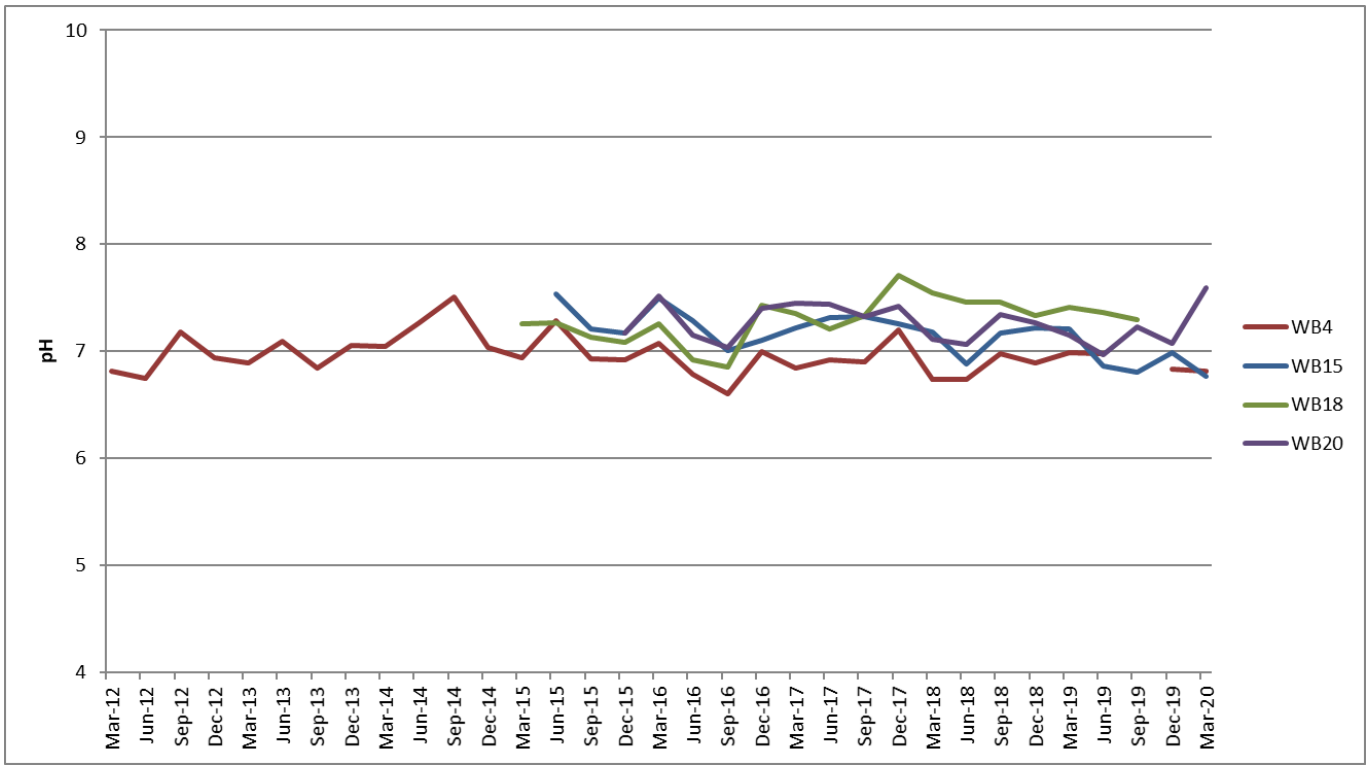


Figure 20 Summary of the groundwater pH for the life of mine at Hera Mine

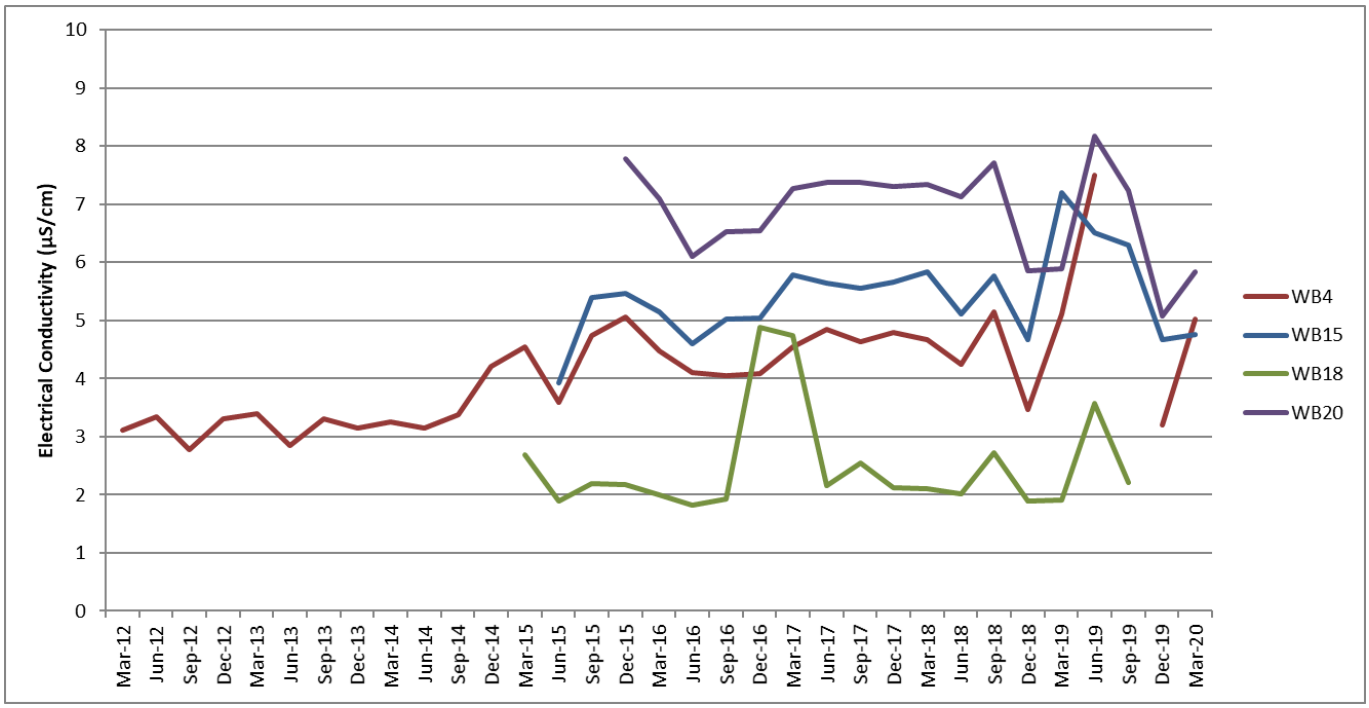


Figure 21 Summary of the Groundwater Electrical Conductivity for the life of mine at Hera Mine

Groundwater Take

Figure 21 presents a summary of the groundwater production for the last five financial (water) years. Groundwater production monitoring prior to this time was deficient and insufficient data is available to present. Groundwater production has significantly decreased from the previous water year (455.7 ML). This is due to Hera intersected significant volumes of water in the underground decline in October 2017 and February 2018. The holes were then plugged and water production has since reduced.

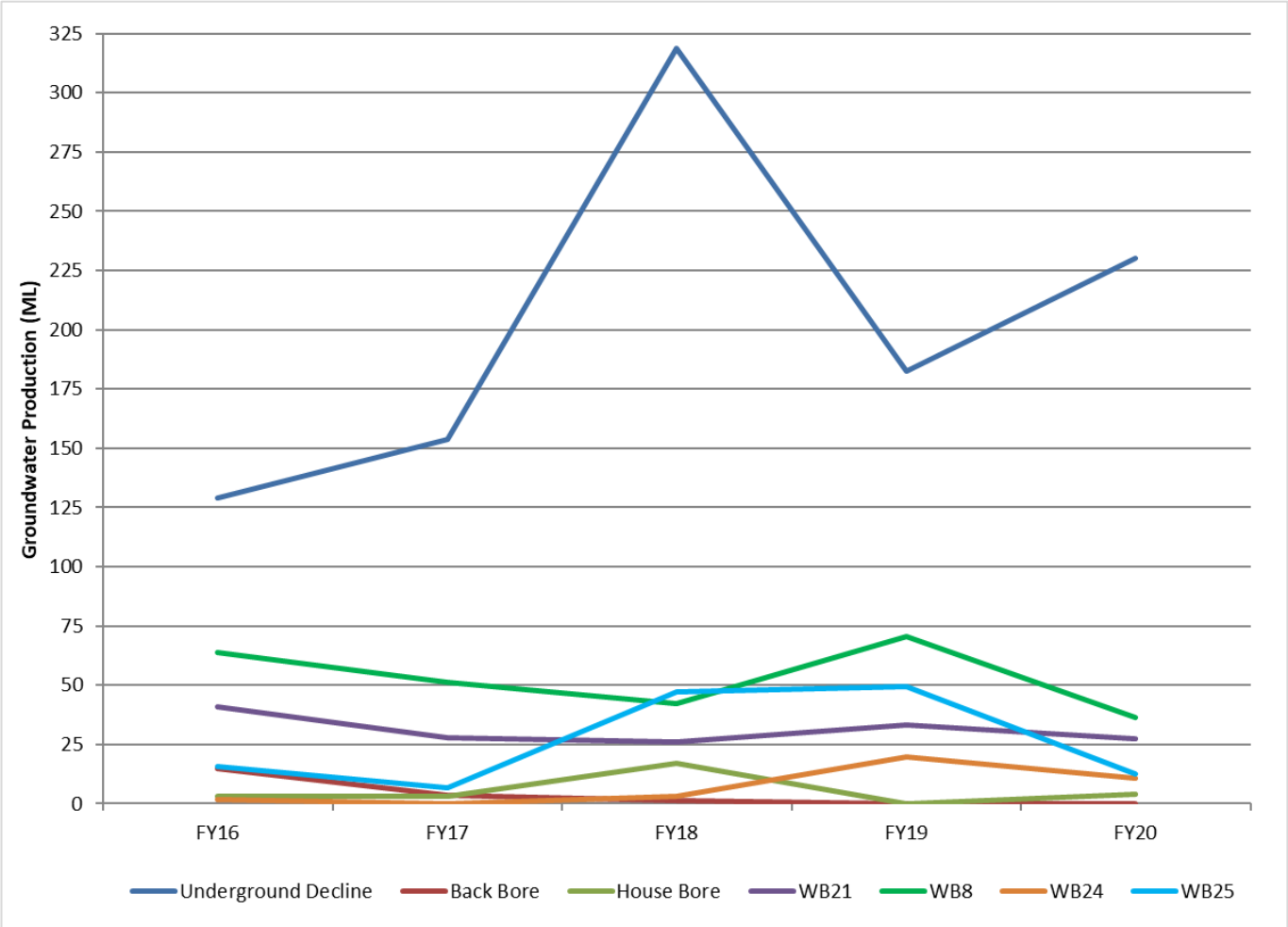


Figure 22 Summary of Groundwater production for the life of the mine

7.3.3 Performance Issues and Proposed Improvements

No groundwater incidents were recorded during the reporting period. Further updates to the *Water Management Plan* will be undertaken in the following reporting period as required.

8 Rehabilitation

8.1 Buildings and Infrastructure

No buildings or mine infrastructure were demolished during the reporting period.

8.2 Rehabilitation of Disturbed Land

Hera has only disturbed land directly required for current mining operations. Therefore, no significant rehabilitation of disturbed land is planned until mine closure. Progressive rehabilitation will only be undertaken in sections of the mine no longer required for mining purposes, if areas become available. This aligns with the commitments made in the approved MOP, which state that no rehabilitation is planned to be undertaken during the MOP term.

8.3 Rehabilitation Trials and Research

During the reporting period Hera continued with tailings storage facility (TSF) column trials with the expert assistance of SGM Environmental. The trials are being undertaken to determine the most appropriate cap thickness on the TSF upon mine closure. Trial simulated rainfall was applied until the trials reached saturation point. Each trial contained tailings and a different thickness cap (0.2m, 0.4m, 0.6m and 0.8m). The 0.8m trial was constructed outside and is shown below in **Photo 1**. The intermediate bulk container (IBC) was placed on stacked pallets which were slightly graded so that seepage flows toward a drainage tap at the base of the trial. The column is ~1 m tall and has a surface area of ~1.17 m^2.

The trials indicated that the 0.6 m cap was most suitable for rehabilitation purposes. During the reporting period it was found that increasing the cover thickness from 0.6 m to 0.8 m is likely to improve seepage from less than 1% to near 0%. The sensitivity analysis showed that cover performance is unlikely to improve beyond 0.8 m, and may start to decline at cover thicknesses equal to or greater than 1 m. The optimum cover thickness is therefore between 0.6-0.8 m. At this stage, the recommended cover thickness is 0.6 m (SGM, 2019).
Five recommendations are made from this study by SGM (2019):

1. Two cover column trials (0.6 m and 0.8 m), should be decommissioned and recommissioned in large steel columns. This will allow the covers to be trialled long-term without the risk of shrinking and swelling of the fill (as was observed in the 0.8 m trial). It will also increase the likelihood that the data collected is accurate before the preferred cover is progressed to a large field trial on the TSF.
2. During the decommissioning, the covers should be assessed to determine whether capillary rise of salts and metals into the covers has occurred. Capillary rise could limit the establishment and growth of vegetation and ultimately, impact cover performance. Testing for capillary rise would involve sampling of the cover and analysis for acidity, salts and metals.
3. Artificial watering should cease, and all three cover column trials seeded to establish vegetation. This will allow the water balance to be further refined, including the prediction of long-term performance by adjusting the water balance for evapotranspiration.
4. A material balance should be conducted to determine if there is enough soil available to construct the recommended covers.
5. Large field trials should be established (if suitable space becomes available on the TSF) and monitored prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.



Photo 1 TSF Column Trial (0.8m)

8.4 Further Development of the Final Rehabilitation Plan

A summary of rehabilitation activities is provided in **Table 29**. The current MOP is approved until 2022 and was updated during the reporting period to include the MOD 5 activities.

PA 10_0191 permits mining operations until 31 December 2022, however Hera anticipates that additional ore will be identified prior to this date, and that an application will be submitted for a further extension of the period during which mining is permitted. As a result, final rehabilitation is not expected to occur during the term of the current approved MOP. Hera Resources will commence the detailed mine closure planning process at least 5 years prior to the anticipated mine closure date (i.e. the planned cessation of mining), with a closure MOP being prepared two years prior to the expected mine closure date.

During the reporting period, disturbance footprints were calculated in greater detail, utilising a combination of GIS data and aerial imagery. It is important to note that this is not additional disturbance on the ground, but rather a refinement of the area calculations in greater detail.

Table 29 Summary of Rehabilitation Activities

Mine Area Type		Area Affected/ Rehabilitated (ha)		
		Previous Reporting Period (Reported)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
A	**Total Mine Footprint[1]**	**97.65**	**97.65**	**108.43**
B	**Total Active Disturbance[2]**			
B1	Infrastructure	19.8	19.8	19.8
B2	Tailings Storage Facility	48.7	48.7	48.7
B3	Water Management Areas	17.7	17.7	27.6
B4	Waste Rock Emplacement	1.7	1.7	1.7
B5	Stockpiled Material (soil)	9.25	9.25	10.13
B6	Void	0.5	0.5	0.5
	TOTAL	**97.6**	**97.6**	**108.43**
C	**Land Being Prepared For Rehabilitation[3]**	0	0	0
D	**Land Under Active Rehabilitation[4]**	0	0	0
E	**Completed Rehabilitation[5]**	0	0	0

Notes:

1. Total mine footprint includes all areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to mining and associated activities.

2. Total active disturbance includes all areas ultimately requiring rehabilitation.

3. Land being prepared for rehabilitation – includes the sum of mine disturbed land that is under the following rehabilitation phases – decommissioning, landform establishment and growth medium development (as defined in DRE MOP Guidelines).

4. Land under active rehabilitation - includes areas under rehabilitation and being managed to achieve relinquishment – includes the following rehabilitation phases as described in the DRE MOP Guidelines – ecosystem and land use establishment and ecosystem and land use sustainability.

5. Completed rehabilitation – requires formal sign-off by DRE that the area has successfully met the rehabilitation land use objectives and completion criteria.

9 Community

9.1 Environmental Complaints

Nine complaints were received during the reporting period, of which six were from the same landowner expressing dissatisfaction of numerous issues. One of the complaints was about an alleged "environmental spill" from drilling activities onto neighbouring property. This alleged spill was investigated by the Resources Regulator and EPA who both determined no further action was required.

Figure 23 presents a summary of the complaints received at Hera since 2011-2012. Complaints peaked in 2016-2017 and have been reducing since, until the last reporting period. This represents the positive relationship Hera has built and continues to maintain with the community. The landowner who has submitted six complaints during 2019-2020 is currently going through a mediation process with site.

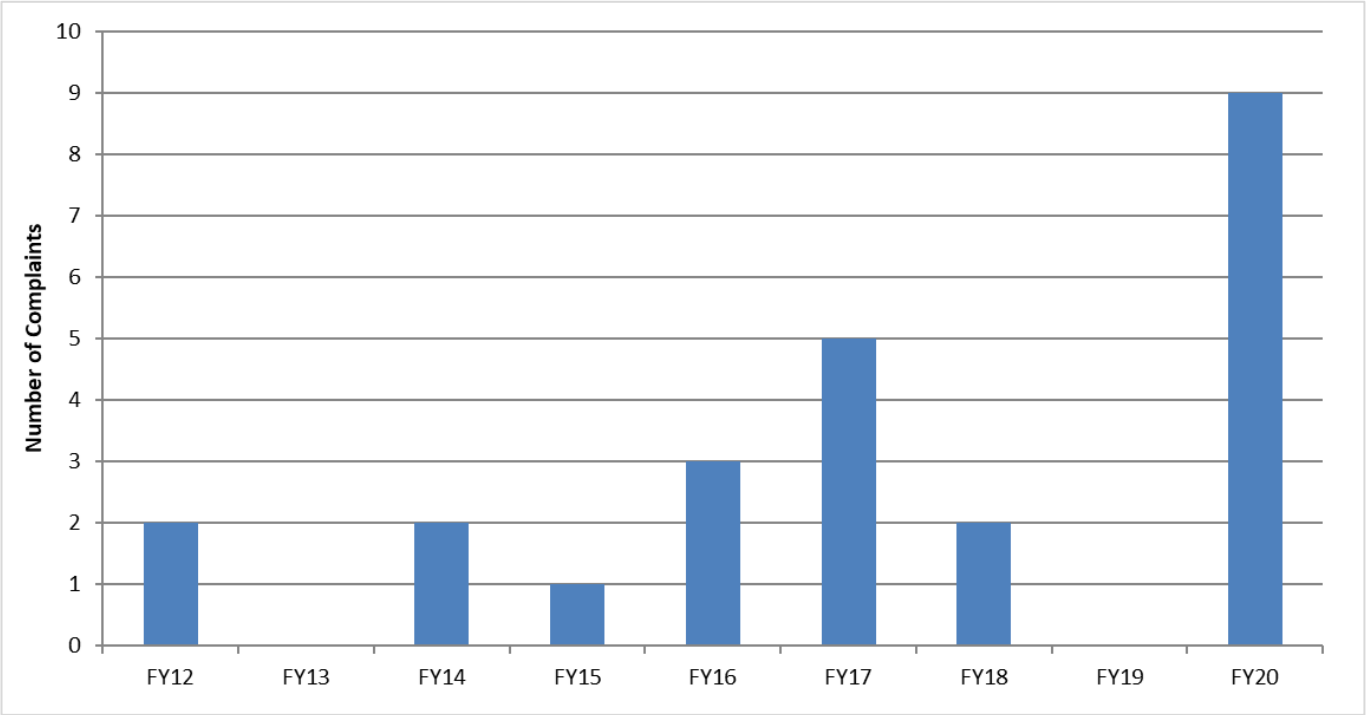


Figure 23 Summary of complaints received for the life of the Hera Mine

9.2 Community Liaison

Hera recognises its responsibilities as a member of the Nymagee community and surrounding region and demonstrates this through a range of community contacts, provisions and interactions. A summary of this involvement is presented in **Table 30.**

Table 30 Summary of Community Consultation During the Reporting Period

Forum	Consultation/Contribution
Nymagee and surrounds	General Community Involvement including: • Hera is one of the largest employers in the local region and recognises this by employing local residents where possible and sourcing contractors from the local region; • Regular attendance to the Nymagee Progress Association which is held on a monthly basis; and • Regular attendance to the Cobar Local Emergency Management Committee held on a quarterly basis.
Financial contributions	Financial contributions made during the reporting period included: • Nymagee Christmas Tree; • Nymagee Progress Association; • Nymagee Gymkhana; • Nymagee Cricket Club; and • Nymagee Tennis Club.
Community Consultative Committee (CCC) Meetings	Hera held four CCC meetings during the reporting period. Meetings are held in February, May, August and November. The CCC meetings are chaired by an Independent Chairperson approved by DPIE and attended by community representatives approved by the Department to discuss the environmental and operational progress of the mine and provide 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.

10 Independent Audit

A three yearly Independent Environmental Audit (IEA) was conducted in late 2019. All actions identified during the audit that **are not currently completed** have been summarised in **Table 31** below. A copy of the full IEA has been attached as **Appendix E**.

Table 31 Summary of Incidents and Non-Compliances during the Annual Review Period

Condition	Assessment	Recommendation	Hera Resources Action Plan	Hera Action Due Date
PA 10_0191 S3.12	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.	Hera will look into additional Dust Deposition Gauges outside the site boundaries with an Air Quality Consultant.	31 December 2020.
PA 10_0191 S3.25	Correspondence verifying that the original plan was submitted to DPE / DPI was not sighted during the Audit. Finding: NOT VERIFIED	Ensure that the current version of the Water Management Plan is approved by DPIE.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.26	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.	Seek DPE Approvals for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.29	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in continuing delays in the finalisation of the plan.	Seek DPE Approval for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.38	The Traffic Management Plan does not clearly address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	Revise the Traffic Management Plan to address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.

		in the vicinee of the villages of Nymagee and Hermidale.		
PA 10_0191 S3.40	The September 2016 IER found that a Final Hazards Analysis (FHA) had not been completed. The recommendation to complete a final hazard analysis has not been actioned. A Preliminary Hazard Analysis (PHA) was completed by RW Corkery & Co as part of the EA (Nov. 2011) (sighted). Section 5.1 of the Hazardous Materials Management Plan states that "As there are no changes to the design of the Mine, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Condition 3(40) of Project Approval whereby a Final Hazards Analysis was to be prepared". The previous audit in July 2013 noted: "As the Hazardous Materials Management Plan has been approved by the Director-General, YTC Hera is compliant with this condition." However, the 2013 audit was conducted prior to the construction and operation of the processing plant; an area where the majority of the hazardous materials are stored or used. At the time of the audit in September 2016, it was observed that there are hazardous goods (e.g. LNG Class 2.1) and processes (e.g. Meta Foundries – gold room) that were not identified in the original PHA.	Conduct a Final Hazard Analysis in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines	Conduct a Final Hazard Analysis in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines.	30 September 2020.
PA 10_0191 S3.41	No correspondence was available to verify that the EPA, DPI Water, DRE, CSC, RMS, or Workcover were consulted during preparation of the Plan.	Review and update the Hazardous Materials Management Plan. During preparation of the plan consult with the relevant agencies.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.41	The HMMP does not satisfy paragraph (d)(i) in that it does not specify measures in relation to the storing and handling of lead nitrate (and toxic chemical). The plan does not satisfy paragraph (d)(ii) in that it does not describe the route selection for the transportation of cyanide from its point of origin to the mine in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection.	Review and update the Hazardous Materials Management Plan to include the relevant requirements of AS 4452.	The 2019 HAZMAT MP does include the relevant requirements of AS/NZS 4452. Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.41	The HMMP does not satisfy paragraph (e) of this condition in that it does not include all of the procedures contained in the Department's	Review and update the Hazardous Materials Management Plan to include the relevant requirements	The 2019 HAZMAT MP does include the relevant requirements in the Department's Hazardous Industry	4 July 2020.

	Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	of Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	Planning Advisory Paper No. 1 - Emergency Planning. Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	
PA 10_0191 S3.43	DPE approved the Waste Rock Management Plan in July 2013. The WRMP had not been prepared and submitted for the approval of the Secretary within six months of this Project Approval (audit interview).	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.43	Section 4.3.2.1 in the WRMP describes the monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation. Specific visual levels trigger proposed management actions such as pumping to the process water dam. Trigger levels for acid detection (e.g. ph levels) have not been included in the WRMP.	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S3.43	Measures to effectively isolate potential acid forming material in rock dumps is described in section 4.3.3 of the WRMP. However, it was stated that both PAF and NAF are stockpiled in Cell 1 (PAF) which is contrary to Table 5 and the material handling flowsheet in Figure 3 of the WRMP. Risk is created when using this material as differentiation between NAF and PAF relies on visual inspection. There is a risk where PAF, instead of NAF, is used for other works on site (which has occurred on one occasion when PAF was used to construct a clean water drain; it was retrieved on the same day and self-reported) (audit interview and observation).	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
PA 10_0191 S5.1	The EMS provides a simple framework for the management of the environmental obligations associated with the Project. The framework presented in the EMS is based on ISO 14001. The framework as implemented is not sufficient to adequately manage Hera's compliance obligations under this Approval.	Implement the Environmental Management System Recommendations described in Section 7.1 of this report.	Hera will commit to implementing the EMS as described in the IEA.	4 April 2021.

PA 10_0191 S5.3	The plans in general do not provide a program to investigate and implement ways to improve the environmental performance of the project over time.	During the review and revision of each plan required under this Approval, develop a program to investigate and implement ways to improve the environmental performance of the project over time.	This will be addressed via the EMS.	4 April 2021.
EPL 20179 L2.4	During the 2019 reporting year on 3 occasions the cyanide destruction circuit failed and cyanide exceeding the licence limit of 10mg/l was discharged to the process water ponds. During the 2018 reporting year concentrations of weak acid dissociable (WAD) cyanide in discharges from Licence Point 1 and Licence Point 2 exceeded limits on a number of occasions. During the 2017 reporting year there were two non-complaint discharges from Point 3. Water quality concentration limit exceedances following heavy storm event. Pumps were set up to empty the sediment basin to reduce the amount of water discharged.	Review the investigations relating to the WAD Cyanide non-compliances to determine if there are systemic issues in relation to cyanide level management in the process water system.	A review of cyanide management in the Process Plant will be conducted.	4 April 2021.
EPL 20179 O3.0	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.	Hera will look into additional Dust Deposition Gauges outside the site boundaries with an Air Quality Consultant.	31 December 2020.
EPL 20179 M2.1	Refer to Conditions M2.2 and M2.3 below.	Refer to Condition M2.3 below.	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	4 April 2021.

EPL 20179 M2.3	2018/19: On 5 occasions testing for Weak Acid Dissociable (WAD) Cyanide within the detox circuit when discharging to the tailing's storage facility, was not undertaken. 2017/18: Licence Points 1 and 2 were not sampled during daily discharge. Sample Point 27 were not tested quarterly for electrical conductivity	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	4 April 2021.
EPL 20179 R2.2	A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA. Notifications (incident reports) were provided to the EPA on: - 4 January 2017 (incident 16 December 2016) sediment laden discharge during storm event from Point 3. The incident was reported on 4 January 2017. The delay in reporting related to the time required for off-site sample analysis.	Hera has submitted the required incident reports to the EPA, however due to delays, usually associated with lab testing, the 7-day reporting requirement has not been met. It is recommended that Hera request a modification to this EPL condition to modify the 7-day written report requirement to provide sufficient time for lab analysis to be completed.	The EPL will be amended to reflect Schedule 5, Condition 7 of the PA.	4 April 2021.

11 Incidents and Non-Compliances During the Reporting Period

A summary of incidents and non-compliances have been provided in **Table 32** below. Further detail is provided in the relevant sub-sections of **Section 6** and **Section 7**.

Table 32 Summary of Incidents and Non-Compliances during the Annual Review Period

Date	Category	Summary of Incident/Non-Compliance	Reported to:	Section Addressed
Ongoing	Dust	Elevated dust levels recorded at Hera commencing in July 2018 and continuing throughout the year till the end of the reporting period. Dust levels were most likely caused by background conditions resulting from the prolonged drought.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 6.2
23 November 2019	WREA	Temporary placement of waste rock on the WREA resulting in pushed up rock being above the 10m height. Incident was not reported as per Condition 7, Schedule 5. MOD5 (approved) increased the height limit to 15m.	DPIE, Resources Regulator, EPA, Cobar Shire Council	*Waste Rock Management Plan*
1 October 2019	Community Complaint / Environmental Spill	Alleged "environmental spill" from drilling activities onto neighbouring property - investigation was closed out by Resources Regulator and the EPA following their investigations.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 9.1
2 November 2019	Airblast Overpressure	The blast monitor recorded an overpressure of 132 dB(L) from a development shot 270m below surface.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 6.7
25-27 March 2020	Administrative	WAD Cyanide levels were not measured for three consecutive days.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 7.2
25 April 2020	Hydrocarbon Seepage	Hydrocarbon spill from the fuel bay. Following heavy rainfall the fuel bay sump overflowed resulting in the spill.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 6.4
4-5 April 2020	Non-compliant transfer of contaminated water	Discharge of water from the WREA Leachate Pond to the Sediment Basin via an open internal road spoon drain.	DPIE, Resources Regulator, EPA, Cobar Shire Council	Section 7.2

12 Activities to be Completed in the Next Reporting Period

During the next reporting period, mining activities and operations at the site will continue as per current operations outlined in **Section 4**. In accordance with the approved MOP, no rehabilitation is planned for the following reporting period.

Table 33 provides a summary of proposed activities for the next Annual Review reporting period.

Table 33 Activities Proposed for the Next Annual Review Reporting Period

Proposed activity	Timing
Following approval of MOD 5, Hera Resources will update all environmental management plans, and submit for consultation with the relevant agencies.	Ongoing
Install a 13.7 ha, 204 to embankment crest (168 to spillway crest) ML Water Management Dam to act as an external decant pond for the existing TSF.	FY 2021

Appendix A Water Quality Monitoring Results

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
16/05/2019	0	0	
17/05/2019	0	0	
18/05/2019	0	0	
19/05/2019	0	0	
20/05/2019	0	0	
21/05/2019	0	0	
22/05/2019	0	0	
23/05/2019	0	0	
24/05/2019	0	0	
25/05/2019	0	0	
26/05/2019	NR	NR	Plant shutdown, no discharge
27/05/2019	NR	NR	Plant shutdown, no discharge
28/05/2019	0	0	
29/05/2019	0	5	
30/05/2019	0	0	
31/05/2019	0	0	
01/06/2019	0	0	
02/06/2019	5	0	
03/06/2019	5	0	
04/06/2019	0	0	
05/06/2019	5	0	
06/06/2019	10	0	
07/06/2019	0	0	
08/06/2019	3	0	
09/06/2019	0	0	
10/06/2019	0	0	
11/06/2019	0	0	
12/06/2019	0	0	
13/06/2019	0	0	
14/06/2019	0	0	
15/06/2019	0	0	
16/06/2019	0	0	
17/06/2019	0	0	
18/06/2019	0	0	
19/06/2019	2	0	
20/06/2019	0	0	
21/06/2019	0	0	
22/06/2019	0	0	
23/06/2019	0	0	
24/06/2019	0	0	
25/06/2019	0	0	
26/06/2019	0	0	
27/06/2019	0	0	
28/06/2019	0	0	
29/06/2019	0	0	
30/06/2019	0	0	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
01/07/2019	0	0	
02/07/2019	5	1	
03/07/2019	0	0	
04/07/2019	0	0	
05/07/2019	0	4	
06/07/2019	0	0	
07/07/2019	0	0	
08/07/2019	0	0	
09/07/2019	0	0	
10/07/2019	0	0	
11/07/2019	0	0	
12/07/2019	0	0	
13/07/2019	10	0	
14/07/2019	0	0	
15/07/2019	0	0	
16/07/2019	0	0	
17/07/2019	0	0	
18/07/2019	0	0	
19/07/2019	0	0	
20/07/2019	1	3	
21/07/2019	0	0	
22/07/2019	5	1	
23/07/2019	0	2	
24/07/2019	NR	NR	Plant shutdown, no discharge
25/07/2019	NR	NR	Plant shutdown, no discharge
26/07/2019	NR	NR	Plant shutdown, no discharge
27/07/2019	NR	NR	Plant shutdown, no discharge
28/07/2019	0	0	
29/07/2019	0	0	
30/07/2019	0	0	
31/07/2019	0	0	
01/08/2019	0	0	
02/08/2019	0	0	
03/08/2019	0	0	
04/08/2019	0	0	
05/08/2019	0	0	
06/08/2019	0	0	
07/08/2019	9	0	
08/08/2019	0	0	
09/08/2019	0	2	
10/08/2019	0	0	
11/08/2019	0	0	
12/08/2019	0	0	
13/08/2019	0	0	
14/08/2019	0	0	
15/08/2019	0	0	
16/08/2019	0	0	
17/08/2019	0	0	
18/08/2019	0	0	
19/08/2019	0	0	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
20/08/2019	0	0	
21/08/2019	0	0	
22/08/2019	0	0	
23/08/2019	0	0	
24/08/2019	0	0	
25/08/2019	0	0	
26/08/2019	0	0	
27/08/2019	0	0	
28/08/2019	0	0	
29/08/2019	0	0	
30/08/2019	0	0	
31/08/2019	0	0	
01/09/2019	0	0	
02/09/2019	0	0	
03/09/2019	0	0	
04/09/2019	0	0	
05/09/2019	0	0	
06/09/2019	0	0	
07/09/2019	0	0	
08/09/2019	0	0	
09/09/2019	1	2	
10/09/2019	1	0	
11/09/2019	1	0	
12/09/2019	0	0	
13/09/2019	0	0	
14/09/2019	0	0	
15/09/2019	5	0	
16/09/2019	0	0	
17/09/2019	0	6	
18/09/2019	0	0	
19/09/2019	0	0	
20/09/2019	0	0	
21/09/2019	0	0	
22/09/2019	0	0	
23/09/2019	0	0	
24/09/2019	0	0	
25/09/2019	0	0	
26/09/2019	0	0	
27/09/2019	0	0	
28/09/2019	0	0	
29/09/2019	0	0	
30/09/2019	0	0	
01/10/2019	0	0	
02/10/2019	0	0	
03/10/2019	0	0	
04/10/2019	0	0	
05/10/2019	0	0	
06/10/2019	0	0	
07/10/2019	0	0	
08/10/2019	1	2	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
09/10/2019	NR	NR	Plant shutdown, no discharge
10/10/2019	NR	NR	Plant shutdown, no discharge
11/10/2019	0	0	
12/10/2019	2	4	
13/10/2019	0	1	
14/10/2019	0	0	
15/10/2019	0	0	
16/10/2019	0	0	
17/10/2019	0	0	
18/10/2019	0	0	
19/10/2019	0	0	
20/10/2019	0	0	
21/10/2019	0	0	
22/10/2019	0	0	
23/10/2019	0	0	
24/10/2019	0	0	
25/10/2019	0	0	
26/10/2019	0	0	
27/10/2019	0	0	
28/10/2019	0	0	
29/10/2019	0	0	
30/10/2019	0	0	
31/10/2019	0	0	
01/11/2019	0	0	
02/11/2019	0	0	
03/11/2019	0	0	
04/11/2019	0	0	
05/11/2019	0	0	
06/11/2019	0	0	
07/11/2019	0	0	
08/11/2019	0	0	
09/11/2019	0	0	
10/11/2019	0	0	
11/11/2019	0	0	
12/11/2019	0	0	
13/11/2019	0	0	
14/11/2019	0	0	
15/11/2019	0	0	
16/11/2019	0	0	
17/11/2019	0	0	
18/11/2019	0	0	
19/11/2019	0	0	
20/11/2019	0	0	
21/11/2019	0	0	
22/11/2019	0	0	
23/11/2019	0	0	
24/11/2019	0	0	
25/11/2019	0	0	
26/11/2019	0	0	
27/11/2019	0	0	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
28/11/2019	0	0	
29/11/2019	0	0	
30/11/2019	0	0	
01/12/2019	0	0	
02/12/2019	0	0	
03/12/2019	8.5	0	
04/12/2019	1.66	1.48	
05/12/2019	0	0.85	
06/12/2019	0	0	
07/12/2019	0	0	
08/12/2019	0	0	
09/12/2019	0	0	
10/12/2019	0	0	
11/12/2019	0	0	
12/12/2019	0	0	
13/12/2019	0	0	
14/12/2019	0	0	
15/12/2019	0	0	
16/12/2019	0	0	
17/12/2019	0	0	
18/12/2019	0	0	
19/12/2019	0	0	
20/12/2019	0	0	
21/12/2019	0	0	
22/12/2019	0	0	
23/12/2019	0	0	
24/12/2019	0	0	
25/12/2019	0	0	
26/12/2019	0	0	
27/12/2019	0	0	
28/12/2019	0	0	
29/12/2019	0	0	
30/12/2019	0	0	
31/12/2019	0	0	
01/01/2020	0	0	
02/01/2020	0	0	
03/01/2020	0	0	
04/01/2020	0	0	
05/01/2020	0	0	
06/01/2020	0	0	
07/01/2020	0	0	
08/01/2020	0	0	
09/01/2020	0	0	
10/01/2020	0	0	
11/01/2020	0	0	
12/01/2020	0	0	
13/01/2020	0	0	
14/01/2020	0	0	
15/01/2020	0	0	
16/01/2020	0	0	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
17/01/2020	0	0	
18/01/2020	0	0	
19/01/2020	0	0	
20/01/2020	0	0	
21/01/2020	0	0	
22/01/2020	0	0	
23/01/2020	0	0	
24/01/2020	0	0.37	
25/01/2020	0	0.88	
26/01/2020	0	0	
27/01/2020	0	0	
28/01/2020	0	0	
29/01/2020	0	0	
30/01/2020	0	0	
31/01/2020	0	0	
01/02/2020	0	0	
02/02/2020	0	0	
03/02/2020	0	0	
04/02/2020	0	0	
05/02/2020	0	0	
06/02/2020	0	0	
07/02/2020	0	0	
08/02/2020	0	0	
09/02/2020	0	0	
10/02/2020	0	0	
11/02/2020	0	0	
12/02/2020	0	0	
13/02/2020	0	0	
14/02/2020	0	0	
15/02/2020	0	0	
16/02/2020	0	0	
17/02/2020	0	0	
18/02/2020	0	0	
19/02/2020	0	0	
20/02/2020	0	0	
21/02/2020	0	0	
22/02/2020	0	0	
23/02/2020	0	0	
24/02/2020	0	0	
25/02/2020	0	0	
26/02/2020	0	0	
27/02/2020	0	0	
28/02/2020	0	0	
29/02/2020	4	1	
01/03/2020	4	1	
02/03/2020	4	1	
03/03/2020	NR	3	Plant shutdown, no discharge to PWD
04/03/2020	NR	NR	Plant shutdown, no discharge
05/03/2020	NR	NR	Plant shutdown, no discharge
06/03/2020	NR	NR	Plant shutdown, no discharge

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
07/03/2020	0	NR	Plant shutdown, no discharge to TSF
08/03/2020	0	0	
09/03/2020	0	0	
10/03/2020	0	0	
11/03/2020	0	0	
12/03/2020	0	0	
13/03/2020	0	0	
14/03/2020	0	0	
15/03/2020	0	0	
16/03/2020	0	0	
17/03/2020	0	0	
18/03/2020	0	0	
19/03/2020	0	0	
20/03/2020	0	0	
21/03/2020	0	0	
22/03/2020	1	1	
23/03/2020	0	0	
24/03/2020	0	0	
25/03/2020	No sample	3	No sample taken from PWD, reported to DPIE - LR
26/03/2020	No sample	3	No sample taken from PWD, reported to DPIE - LR
27/03/2020	No sample	0	No sample taken from PWD, reported to DPIE - LR
28/03/2020	0	0	
29/03/2020	0	0	
30/03/2020	0	0	
31/03/2020	0	0	
01/04/2020	0	0	
02/04/2020	0	0	
03/04/2020	0	0	
04/04/2020	0	0	
05/04/2020	0	0	
06/04/2020	0	0	
07/04/2020	0	0	
08/04/2020	0	0	
09/04/2020	0	0	
10/04/2020	0	0	
11/04/2020	0	0	
12/04/2020	0	0	
13/04/2020	0	0	
14/04/2020	0	0	
15/04/2020	0	0	
16/04/2020	0	0	
17/04/2020	0	0	
18/04/2020	0	0	
19/04/2020	0	0	
20/04/2020	0	0	
21/04/2020	0	0	
22/04/2020	0	0	
23/04/2020	0	0	
24/04/2020	0	0	
25/04/2020	0	0	

Date	WAD Cyanide		Comments (NR= No result)
	Process Water Dam (mg/L)	TSF (mg/L)	
26/04/2020	0	0	
27/04/2020	0	0	
28/04/2020	0	0	
29/04/2020	0	0	
30/04/2020	0	0	
01/05/2020	0	0	
02/05/2020	0	0	
03/05/2020	0	0	
04/05/2020	0	0	
05/05/2020	0	0	
06/05/2020	0	0	
07/05/2020	0	0	
08/05/2020	0	0	
09/05/2020	0	0	
10/05/2020	0	0	
11/05/2020	0	0	
12/05/2020	0	0	
13/05/2020	0	0	
14/05/2020	0	0	
15/05/2020	0	0	

Appendix B Blast Monitoring Summary

		Compliance				Waveforms	
				Vibration	Air Blast	Harris Residence	
Date	Time	Day of Week	Time Period	mm/s	dB(L)	mm/s	dB(L)
16/05/2019	18:45:00	Thursday	EVENING	2.00	115.0	<0.35	<88
16/05/2019	18:45:00	Thursday	EVENING	2.00	115.0	<0.35	<88
15/05/2019	06:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	<88
17/05/2019	19:10:00	Friday	EVENING	2.00	115.0	<0.35	<88
17/05/2019	19:10:00	Friday	EVENING	2.00	115.0	<0.35	<88
18/05/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	<88
19/05/2019	18:50:00	Sunday	NIGHT	1.00	115.0	<0.35	<88
20/05/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	<88
20/05/2019	18:45:00	Monday	EVENING	2.00	115.0	<0.35	<88
20/05/2019	18:45:00	Monday	EVENING	2.00	115.0	<0.35	<88
21/05/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	<88
21/05/2019	19:00:00	Tuesday	EVENING	2.00	115.0	<0.35	<88
22/05/2019	06:43:00	Wednesday	NIGHT	1.00	115.0	<0.35	<88
23/05/2019	07:00:00	Thursday	DAY	5.00	115.0	<0.35	<88
23/05/2019	19:00:00	Thursday	EVENING	2.00	115.0	<0.35	<88
23/05/2019	19:00:00	Thursday	EVENING	2.00	115.0	<0.35	<88
24/05/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	<88
24/05/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	<88
24/05/2019	18:45:00	Friday	EVENING	2.00	115.0	<0.35	<88
25/05/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	<88
25/05/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	<88
25/05/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	<88
25/05/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	<88
26/05/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	<88
26/05/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	<88
26/05/2019	18:45:00	Sunday	NIGHT	1.00	115.0	<0.35	<88
27/05/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	<88
27/05/2019	18:45:00	Monday	EVENING	2.00	115.0	<0.35	<88
28/05/2019	07:00:00	Tuesday	DAY	5.00	115.0	<0.35	<88
29/05/2019	06:45:00	Wednesday	NIGHT	1.00	115.0	<0.35	<88
29/05/2019	06:45:00	Wednesday	NIGHT	1.00	115.0	<0.35	<88
29/05/2019	07:00:00	Wednesday	DAY	5.00	115.0	<0.35	<88
30/05/2019	19:30:00	Thursday	EVENING	2.00	115.0	<0.35	<88
01/06/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
01/06/2019	18:41:28	Saturday	EVENING	2.00	115.0	<0.35	
01/06/2019	18:41:28	Saturday	EVENING	2.00	115.0	<0.35	
02/06/2019	07:27:30	Sunday	NIGHT	1.00	115.0	<0.35	
02/06/2019	07:27:30	Sunday	NIGHT	1.00	115.0	<0.35	
02/06/2019	18:50:00	Sunday	EVENING	1.00	115.0	<0.35	
02/06/2019	18:50:00	Sunday	EVENING	1.00	115.0	<0.35	
03/06/2019	07:00:00	Monday	DAY	5.00	115.0	<0.35	
03/06/2019	18:45:00	Monday	EVENING	2.00	115.0	<0.35	
04/06/2019	06:50:00	Tuesday	NIGHT	1.00	115.0	<0.35	
04/06/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
04/06/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
06/06/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
06/06/2019	18:50:00	Thursday	EVENING	2.00	115.0	<0.35	
06/06/2019	18:50:00	Thursday	EVENING	2.00	115.0	<0.35	
07/06/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	

07/06/2019	18:45:00	Friday	EVENING	2.00	115.0	<0.35	
08/06/2019	06:50:00	Saturday	NIGHT	1.00	115.0	<0.35	
08/06/2019	06:50:00	Saturday	NIGHT	1.00	115.0	<0.35	
08/06/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	
08/06/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	
08/06/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	
09/06/2019	07:00:00	Sunday	NIGHT	1.00	115.0	<0.35	
09/06/2019	07:00:00	Sunday	NIGHT	1.00	115.0	<0.35	
09/06/2019	07:00:00	Sunday	NIGHT	1.00	115.0	<0.35	
09/06/2019	18:55:00	Sunday	EVENING	1.00	115.0	<0.35	
09/06/2019	18:55:00	Sunday	EVENING	2.00	115.0	<0.35	
10/06/2019 (PH)	07:00:00	Monday	NIGHT	1.00	115.0	<0.35	
10/06/2019 (PH)	19:30:00	Monday	EVENING	1.00	115.0	<0.35	
10/06/2019 (PH)	19:30:00	Monday	EVENING	1.00	115.0	<0.35	
11/06/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
11/06/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
11/06/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
11/06/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
15/06/2019	06:40:00	Saturday	NIGHT	1.00	115.0	<0.35	
15/06/2019	12:00:00	Saturday	DAY	5.00	115.0	<0.35	
16/06/2019	03:30:00	Sunday	NIGHT	1.00	115.0	<0.35	
16/06/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
16/06/2019	12:10:08	Sunday	DAY	5.00	115.0	0.32	85.0
17/06/2019	06:40:00	Monday	NIGHT	1.00	115.0	<0.35	
18/06/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
18/06/2019	13:00:17	Tuesday	DAY	5.00	115.0	<0.35	
19/06/2019	18:48:40	Wednesday	EVENING	2.00	115.0	0.45	78.6
20/06/2019	01:30:00	Thursday	NIGHT	1.00	115.0	<0.35	
20/06/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
20/06/2019	19:50:15	Thursday	EVENING	2.00	115.0	0.48	77.8
22/06/2019	06:30:00	Saturday	NIGHT	1.00	115.0	<0.35	
22/06/2019	19:00:00	Saturday	EVENING	2.00	115.0	<0.35	
23/06/2019	07:11:00	Sunday	NIGHT	1.00	115.0	<0.35	
23/06/2019	07:11:00	Sunday	NIGHT	1.00	115.0	<0.35	
23/06/2019	19:00:00	Sunday	EVENING	1.00	115.0	<0.35	
24/06/2019	06:52:21	Monday	NIGHT	1.00	115.0	<0.35	
24/06/2019	18:50:42	Monday	EVENING	2.00	115.0	0.42	77.8
24/06/2019	18:50:42	Monday	EVENING	2.00	115.0	0.42	77.8
25/06/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
25/06/2019	18:50:00	Tuesday	EVENING	2.00	115.0	<0.35	
25/06/2019	18:50:00	Tuesday	EVENING	2.00	115.0	<0.35	
26/06/2019	6:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	
26/06/2019	18:45:00	Wednesday	EVENING	2.00	115.0	<0.35	
27/06/2019	6:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
27/06/2019	10:55:41	Thursday	DAY	5.00	115.0	<0.35	
27/06/2019	18:45:00	Thursday	EVENING	2.00	115.0	<0.35	
28/06/2019	6:45:00	Friday	NIGHT	1.00	115.0	<0.35	
28/06/2019	18:43:24	Friday	EVENING	2.00	115.0	0.81	85.8
30/06/2019	18:45:00	Sunday	EVENING	1.00	115.0	<0.35	
01/07/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
01/07/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
02/07/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
02/07/2019	14:03:00	Tuesday	DAY	5.00	115.0	0.44	81.9
03/07/2019	19:00:00	Wednesday	EVENING	2.00	115.0	<0.35	
04/07/2019	08:01:47	Thursday	DAY	5.00	115.0	<0.35	
05/07/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
05/07/2019	14:08:29	Friday	DAY	5.00	115.0	0.49	83.5
06/07/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	

06/07/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
08/07/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
08/07/2019	18:48:51	Monday	EVENING	2.00	115.0	0.41	80.7
09/07/2019	07:00:00	Tuesday	DAY	5.00	115.0	<0.35	
09/07/2019	07:00:00	Tuesday	DAY	5.00	115.0	<0.35	
10/07/2019	07:35:00	Wednesday	DAY	5.00	115.0	<0.35	
11/07/2019	07:00:00	Thursday	DAY	5.00	115.0	<0.35	
11/07/2019	07:00:00	Thursday	DAY	5.00	115.0	<0.35	
11/07/2019	07:00:00	Thursday	DAY	5.00	115.0	<0.35	
12/07/2019	06:50:00	Friday	NIGHT	1.00	115.0	<0.35	
12/07/2019	18:51:43	Friday	EVENING	2.00	115.0	0.48	80.0
13/07/2019	07:15:00	Saturday	DAY	5.00	115.0	<0.35	
14/07/2019	02:00:00	Sunday	NIGHT	1.00	115.0	<0.35	
15/07/2019	07:00:00	Monday	DAY	5.00	115.0	<0.35	
15/07/2019	07:00:00	Monday	DAY	5.00	115.0	<0.35	
17/07/2019	19:15:00	Wednesday	EVENING	2.00	115.0	<0.35	
18/07/2019	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
18/07/2019	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
18/07/2019	14:36:41	Thursday	DAY	5.00	115.0	0.56	86.4
19/07/2019	06:55:00	Friday	NIGHT	1.00	115.0	<0.35	
19/07/2019	06:55:00	Friday	NIGHT	1.00	115.0	<0.35	
20/07/2019	06:55:00	Saturday	NIGHT	1.00	115.0	<0.35	
20/07/2019	16:49:03	Saturday	DAY	5.00	115.0	0.36	79.4
21/07/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
21/07/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
22/07/2019	07:30:13	Monday	DAY	5.00	115.0	<0.35	
23/07/2019	07:00:00	Tuesday	DAY	5.00	115.0	<0.35	
23/07/2019	14:00:54	Tuesday	DAY	5.00	115.0	0.33	89.2
24/07/2019	18:48:43	Wednesday	EVENING	2.00	115.0	0.57	83.5
25/07/2019	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
25/07/2019	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
26/07/2019	07:50:00	Friday	DAY	5.00	115.0	<0.35	
26/07/2019	07:50:00	Friday	DAY	5.00	115.0	<0.35	
26/07/2019	18:55:53	Friday	EVENING	2.00	115.0	0.54	78.6
26/07/2019	18:55:53	Friday	EVENING	2.00	115.0	0.54	78.6
27/07/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
27/07/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
29/07/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
30/07/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
30/07/2019	18:50:00	Tuesday	EVENING	2.00	115.0	<0.35	
31/07/2019	07:13:58	Wednesday	DAY	5.00	115.0	<0.35	
01/08/2019	07:00:35	Thursday	DAY	5.00	115.0	<0.35	
01/08/2019	07:00:35	Thursday	DAY	5.00	115.0	<0.35	
02/08/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
03/08/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
03/08/2019	18:48:13	Saturday	EVENING	2.00	115.0	0.4	78.6
04/08/2019	06:50:00	Sunday	NIGHT	1.00	115.0	<0.35	
05/08/2019	07:05:00	Monday	DAY	5.00	115.0	<0.35	
05/08/2019	07:05:00	Monday	DAY	5.00	115.0	<0.35	
06/08/2019	06:10:00	Tuesday	NIGHT	1.00	115.0	<0.35	
06/08/2019	06:50:00	Tuesday	NIGHT	1.00	115.0	<0.35	
07/08/2019	06:48:00	Wednesday	NIGHT	1.00	115.0	<0.35	
09/08/2019	06:50:00	Friday	NIGHT	1.00	115.0	<0.35	
10/08/2019	07:15:00	Saturday	DAY	5.00	115.0	<0.35	
10/08/2019	15:09:24	Saturday	DAY	5.00	115.0	0.7	100.7
11/08/2019	07:50:00	Sunday	NIGHT	1.00	115.0	<0.35	
11/08/2019	19:45:00	Sunday	EVENING	1.00	115.0	<0.35	
11/08/2019	19:45:00	Sunday	EVENING	1.00	115.0	<0.35	

12/08/2019	07:05:00	Monday	DAY	5.00	115.0	<0.35	
12/08/2019	07:05:00	Monday	DAY	5.00	115.0	<0.35	
13/08/2019	06:35:00	Tuesday	NIGHT	1.00	115.0	<0.35	
13/08/2019	06:35:00	Tuesday	NIGHT	1.00	115.0	<0.35	
14/08/2019	06:40:00	Wednesday	NIGHT	1.00	115.0	<0.35	
14/08/2019	06:40:00	Wednesday	NIGHT	1.00	115.0	<0.35	
14/08/2019	06:40:00	Wednesday	NIGHT	1.00	115.0	<0.35	
15/08/2019	07:20:00	Thursday	DAY	5.00	115.0	<0.35	
15/08/2019	07:20:00	Thursday	DAY	5.00	115.0	<0.35	
15/08/2019	13:56:38	Thursday	DAY	5.00	115.0	<0.35	
17/08/2019	12:26:34	Saturday	DAY	5.00	115.0	0.60	76.9
18/08/2019	06:43:15	Sunday	NIGHT	1.00	115.0	<0.35	
18/08/2019	18:39:11	Sunday	EVENING	1.00	115.0	0.39	98.8
19/08/2019	07:00:00	Monday	DAY	5.00	115.0	<0.35	
21/08/2019	06:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	
21/08/2019	18:01:51	Wednesday	EVENING	2.00	115.0	<0.35	
22/08/2019	06:35:00	Thursday	NIGHT	1.00	115.0	<0.35	
22/08/2019	06:35:00	Thursday	NIGHT	1.00	115.0	<0.35	
23/08/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	
23/08/2019	18:47:02	Friday	EVENING	2.00	115.0	0.49	80.7
24/08/2019	06:55:00	Saturday	NIGHT	1.00	115.0	<0.35	
25/08/2019	01:46:45	Sunday	NIGHT	1.00	115.0	0.6	80.7
25/08/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
26/08/2019	06:40:00	Monday	NIGHT	1.00	115.0	<0.35	
27/08/2019	06:27:00	Tuesday	NIGHT	1.00	115.0	<0.35	
27/08/2019	06:27:00	Tuesday	NIGHT	1.00	115.0	<0.35	
27/08/2019	06:27:00	Tuesday	NIGHT	1.00	115.0	<0.35	
27/08/2019	06:27:00	Tuesday	NIGHT	1.00	115.0	<0.35	
27/08/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
29/08/2019	06:42:00	Thursday	NIGHT	1.00	115.0	<0.35	
30/08/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
30/08/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
31/08/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
31/08/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
31/08/2019	19:07:09	Saturday	EVENING	2.00	115.0	0.52	80.1
01/09/2019	07:00:26	Sunday	NIGHT	1.00	115.0	<0.35	
02/09/2019	06:48:00	Monday	NIGHT	1.00	115.0	<0.35	
02/09/2019	06:48:00	Monday	NIGHT	1.00	115.0	<0.35	
03/09/2019	06:53:30	Tuesday	NIGHT	1.00	115.0	<0.35	
04/09/2019	06:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	
04/09/2019	18:38:49	Wednesday	EVENING	2.00	115.0	<0.35	
05/09/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
05/09/2019	18:50:02	Thursday	EVENING	2.00	115.0	0.40	77.8
06/09/2019	06:35:00	Friday	NIGHT	1.00	115.0	<0.35	
07/09/2019	06:54:50	Saturday	NIGHT	1.00	115.0	<0.35	
07/09/2019	06:54:50	Saturday	NIGHT	1.00	115.0	<0.35	
07/09/2019	18:40:05	Saturday	EVENING	2.00	115.0	<0.35	
08/09/2019	06:54:19	Sunday	NIGHT	1.00	115.0	<0.35	
08/09/2019	06:54:19	Sunday	NIGHT	1.00	115.0	<0.35	
08/09/2019	18:43:04	Sunday	EVENING	1.00	115.0	0.48	83.4
09/09/2019	06:55:00	Monday	NIGHT	1.00	115.0	<0.35	
10/09/2019	07:27:48	Tuesday	DAY	5.00	115.0	<0.35	
10/09/2019	07:27:48	Tuesday	DAY	5.00	115.0	<0.35	
13/09/2019	18:42:50	Friday	EVENING	2.00	115.0	<0.35	
19/09/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
19/09/2019	18:41:35	Thursday	EVENING	2.00	115.0	0.44	77.8
20/09/2019	07:45:00	Friday	DAY	5.00	115.0	<0.35	
21/09/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	

22/09/2019	06:43:45	Sunday	NIGHT	1.00	115.0	<0.35	
23/09/2019	06:45:59	Monday	NIGHT	1.00	115.0	<0.35	
24/09/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
24/09/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
26/09/2019	18:35:50	Thursday	EVENING	2.00	115.0	<0.35	
27/09/2019	06:50:00	Friday	NIGHT	1.00	115.0	<0.35	
28/09/2019	20:07:20	Saturday	EVENING	2.00	115.0	<0.35	
29/09/2019	14:10:06	Sunday	DAY	1.00	115.0	<0.35	
29/09/2019	19:05:05	Sunday	EVENING	1.00	115.0	<0.35	
30/09/2019	18:52:55	Monday	EVENING	2.00	115.0	<0.35	
01/10/2019	18:35:41	Tuesday	EVENING	2.00	115.0	<0.35	
01/10/2019	18:35:41	Tuesday	EVENING	2.00	115.0	<0.35	
02/10/2019	18:42:24	Wednesday	EVENING	2.00	115.0	0.33	80
03/10/2019	07:12:00	Thursday	DAY	5.00	115.0	<0.35	
03/10/2019	07:12:00	Thursday	DAY	5.00	115.0	<0.35	
03/10/2019	18:38:13	Thursday	EVENING	2.00	115.0	<0.35	
04/10/2019	18:39:48	Friday	EVENING	2.00	115.0	<0.35	
05/10/2019	07:06:25	Saturday	DAY	5.00	115.0	<0.35	
05/10/2019	07:06:25	Saturday	DAY	5.00	115.0	<0.35	
07/10/2019 (PH)	07:06:00	Monday	DAY	1.00	115.0	<0.35	
07/10/2019 (PH)	07:08:45	Monday	DAY	1.00	115.0	<0.35	
07/10/2019 (PH)	07:08:45	Monday	DAY	1.00	115.0	<0.35	
08/10/2019	07:01:14	Tuesday	DAY	5.00	115.0	<0.35	
08/10/2019	07:01:14	Tuesday	DAY	5.00	115.0	<0.35	
09/10/2019	06:43:35	Wednesday	NIGHT	1.00	115.0	<0.35	
10/10/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
11/10/2019	06:47:00	Friday	NIGHT	1.00	115.0	<0.35	
11/10/2019	18:50:20	Friday	EVENING	2.00	115.0	<0.35	
12/10/2019	06:41:00	Saturday	NIGHT	1.00	115.0	<0.35	
12/10/2019	18:47:26	Saturday	EVENING	2.00	115.0	<0.35	
13/10/2019	07:03:00	Sunday	NIGHT	1.00	115.0	<0.35	
13/10/2019	18:46:33	Sunday	EVENING	1.00	115.0	<0.35	
14/10/2019	06:38:54	Monday	NIGHT	1.00	115.0	<0.35	
14/10/2019	18:41:45	Monday	EVENING	2.00	115.0	<0.35	
14/10/2019	18:41:45	Monday	EVENING	2.00	115.0	<0.35	
15/10/2019	06:40:00	Tuesday	NIGHT	1.00	115.0	<0.35	
16/10/2019	06:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	
16/10/2019	18:45:00	Wednesday	EVENING	2.00	115.0	<0.35	
17/10/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
17/10/2019	18:47:02	Thursday	EVENING	2.00	115.0	0.35	85.4
17/10/2019	18:47:02	Thursday	EVENING	2.00	115.0	0.35	85.4
18/10/2019	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
18/10/2019	07:10:00	Friday	DAY	5.00	115.0	<0.35	
20/10/2019	06:52:46	Sunday	NIGHT	1.00	115.0	<0.35	
20/10/2019	09:30:00	Sunday	DAY	1.00	115.0	<0.35	
20/10/2019	18:45:00	Sunday	EVENING	1.00	115.0	<0.35	
21/10/2019	03:15:00	Monday	NIGHT	1.00	115.0	<0.35	
21/10/2019	06:50:00	Monday	NIGHT	1.00	115.0	<0.35	
21/10/2019	10:34:21	Monday	DAY	5.00	115.0	<0.35	
21/10/2019	19:11:34	Monday	EVENING	2.00	115.0	<0.35	
22/10/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
22/10/2019	19:08:19	Tuesday	EVENING	2.00	115.0	<0.35	
23/10/2019	06:34:30	Wednesday	NIGHT	1.00	115.0	<0.35	
24/10/2019	18:47:13	Thursday	EVENING	2.00	115.0	<0.35	
25/10/2019	06:47:00	Friday	NIGHT	1.00	115.0	<0.35	
25/10/2019	13:31:08	Friday	DAY	5.00	115.0	<0.35	
25/10/2019	22:30:00	Friday	NIGHT	1.00	115.0	<0.35	
26/10/2019	06:33:55	Saturday	NIGHT	1.00	115.0	<0.35	

26/10/2019	19:03:57	Saturday	EVENING	2.00	115.0	<0.35	
27/10/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
29/10/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
29/10/2019	12:59:43	Tuesday	DAY	5.00	115.0	0.37	80
31/10/2019	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
31/10/2019	13:38:20	Thursday	DAY	5.00	115.0	0.86	89.5
31/10/2019	13:38:20	Thursday	DAY	5.00	115.0	0.86	89.5
02/11/2019	07:10:57	Saturday	DAY	5.00	115.0	<0.35	
02/11/2019	07:10:57	Saturday	DAY	5.00	115.0	<0.35	
02/11/2019	19:09:29	Saturday	EVENING	2.00	115.0	<0.35	
03/11/2019	06:55:10	Sunday	NIGHT	1.00	115.0	<0.35	
03/11/2019	16:16:48	Sunday	DAY	1.00	115.0	0.91	86.0206
04/11/2019	06:50:00	Monday	NIGHT	1.00	115.0	<0.35	
04/11/2019	18:53:43	Monday	EVENING	2.00	115.0	<0.35	
05/11/2019	06:39:05	Tuesday	NIGHT	1.00	115.0	<0.35	
05/11/2019	06:39:05	Tuesday	NIGHT	1.00	115.0	<0.35	
06/11/2019	06:41:00	Wednesday	NIGHT	1.00	115.0	<0.35	
06/11/2019	18:41:50	Wednesday	EVENING	2.00	115.0	<0.35	
07/11/2019	19:50:00	Thursday	EVENING	2.00	115.0	<0.35	
08/11/2019	18:45:20	Friday	EVENING	2.00	115.0	<0.35	
10/11/2019	18:45:00	Sunday	EVENING	1.00	115.0	<0.35	
11/11/2019	13:54:36	Monday	DAY	5.00	115.0	<0.35	
11/11/2019	19:00:00	Monday	EVENING	2.00	115.0	<0.35	
12/11/2019	12:15:00	Tuesday	DAY	5.00	115.0	<0.35	
13/11/2019	06:40:00	Wednesday	NIGHT	1.00	115.0	<0.35	
13/11/2019	11:22:20	Wednesday	DAY	5.00	115.0	<0.35	
13/11/2019	18:34:50	Wednesday	EVENING	2.00	115.0	<0.35	
15/11/2019	18:45:51	Friday	EVENING	2.00	115.0	1.15	87.9588
15/11/2019	18:45:51	Friday	EVENING	2.00	115.0	1.15	87.9588
16/11/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	
17/11/2019	13:00:00	Sunday	DAY	1.00	115.0	<0.35	
18/11/2019	02:00:00	Monday	NIGHT	1.00	115.0	<0.35	
18/11/2019	09:34:04	Monday	DAY	5.00	115.0	<0.35	
18/11/2019	11:58:50	Monday	DAY	5.00	115.0	<0.35	
18/11/2019	18:52:00	Monday	EVENING	2.00	115.0	<0.35	
19/11/2019	02:15:00	Tuesday	NIGHT	1.00	115.0	<0.35	
19/11/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
19/11/2019	18:45:00	Tuesday	EVENING	2.00	115.0	<0.35	
20/11/2019	06:50:00	Wednesday	NIGHT	1.00	115.0	<0.35	
21/11/2019	11:25:40	Thursday	DAY	5.00	115.0	<0.35	
22/11/2019	06:46:35	Friday	NIGHT	1.00	115.0	<0.35	
22/11/2019	06:46:35	Friday	NIGHT	1.00	115.0	<0.35	
23/11/2019	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
24/11/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
25/11/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
25/11/2019	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
26/11/2019	06:50:00	Tuesday	NIGHT	1.00	115.0	<0.35	
26/11/2019	13:23:04	Tuesday	DAY	5.00	115.0	0.431	100.4
27/11/2019	06:45:00	Wednesday	NIGHT	1.00	115.0	<0.35	
28/11/2019	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
29/11/2019	07:09:00	Friday	DAY	5.00	115.0	<0.35	
30/11/2019	06:59:00	Saturday	NIGHT	1.00	116.0	<0.35	
30/11/2019	06:59:00	Saturday	NIGHT	1.00	115.0	<0.35	
30/11/2019	09:17:34	Saturday	DAY	5.00	115.0	<0.35	
30/11/2019	19:57:27	Saturday	EVENING	2.00	115.0	0.402	83.4
01/12/2019	06:40:00	Sunday	NIGHT	1.00	115.0	<0.35	
02/12/2019	06:57:00	Monday	NIGHT	1.00	115.0	<0.35	
02/12/2019	18:54:20	Monday	EVENING	2.00	115.0	0.40	92.4

03/12/2019	06:55:00	Tuesday	NIGHT	1.00	115.0	<0.35	
04/12/2019	06:43:00	Wednesday	NIGHT	1.00	115.0	<0.35	
05/12/2019	07:26:00	Thursday	DAY	5.00	115.0	<0.35	
05/12/2019	12:30:00	Thursday	DAY	5.00	115.0	<0.35	
06/12/2019	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
06/12/2019	18:44:48	Friday	EVENING	2.00	115.0	0.53	93.1
07/12/2019	07:42:50	Saturday	DAY	5.00	115.0	<0.35	
07/12/2019	18:45:00	Saturday	EVENING	2.00	115.0	<0.35	
08/12/2019	07:03:00	Sunday	NIGHT	1.00	115.0	<0.35	
09/12/2019	19:10:00	Monday	EVENING	2.00	115.0	<0.35	
10/12/2019	07:06:00	Tuesday	DAY	5.00	115.0	<0.35	
10/12/2019	18:58:03	Tuesday	EVENING	2.00	115.0	0.60	85.0
11/12/2019	06:57:30	Wednesday	NIGHT	1.00	115.0	<0.35	
12/12/2019	06:59:20	Thursday	NIGHT	1.00	115.0	<0.35	
12/12/2019	18:45:00	Thursday	EVENING	2.00	115.0	<0.35	
13/12/2019	06:53:15	Friday	NIGHT	1.00	115.0	<0.35	
13/12/2019	06:53:20	Friday	NIGHT	1.00	115.0	<0.35	
13/12/2019	06:53:20	Friday	NIGHT	1.00	115.0	<0.35	
13/12/2019	12:34:31	Friday	DAY	5.00	115.0	0.32	92.3
14/12/2019	06:44:05	Saturday	NIGHT	1.00	115.0	<0.35	
14/12/2019	19:00:00	Saturday	EVENING	2.00	115.0	<0.35	
14/12/2019	19:00:00	Saturday	EVENING	2.00	115.0	<0.35	
15/12/2019	07:52:59	Sunday	NIGHT	1.00	115.0	0.69	83.5
15/12/2019	07:52:59	Sunday	NIGHT	1.00	115.0	0.69	83.5
15/12/2019	19:20:00	Sunday	EVENING	1.00	115.0	<0.35	
16/12/2019	06:45:15	Monday	NIGHT	1.00	115.0	<0.35	
16/12/2019	19:01:12	Monday	EVENING	2.00	115.0	0.74	91.9
16/12/2019	19:01:12	Monday	EVENING	2.00	116.0	0.74	91.9
17/12/2019	00:00:25	Tuesday	NIGHT	1.00	117.0	<0.35	
17/12/2019	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
18/12/2019	18:35:00	Wednesday	EVENING	2.00	115.0	<0.35	
19/12/2019	06:59:40	Thursday	NIGHT	1.00	115.0	<0.35	
19/12/2019	15:14:55	Thursday	DAY	5.00	115.0	0.51	83.5
20/12/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	
20/12/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	
20/12/2019	07:00:00	Friday	DAY	5.00	115.0	<0.35	
22/12/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
22/12/2019	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
23/12/2019	01:00:00	Monday	NIGHT	1.00	115.0	<0.35	
23/12/2019	06:30:00	Monday	NIGHT	1.00	115.0	<0.35	
25/12/2019 (PH)	06:30:00	Wednesday	NIGHT	1.00	115.0	<0.35	
26/12/2019 (PH)	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
27/12/2019	07:36:00	Friday	DAY	5.00	115.0	<0.35	
28/12/2019	06:50:00	Saturday	NIGHT	1.00	116.0	<0.35	
29/12/2019	18:44:39	Sunday	EVENING	1.00	115.0	0.81	87.3
31/12/2019	06:40:00	Tuesday	NIGHT	1.00	115.0	<0.35	
31/12/2019	06:40:00	Tuesday	NIGHT	1.00	115.0	<0.35	
01/01/2020 (PH)	06:56:10	Wednesday	NIGHT	1.00	115.0	<0.35	
03/01/2020	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
03/01/2020	18:58:06	Friday	EVENING	2.00	115.0	0.49	86.0
04/01/2020	06:50:00	Saturday	NIGHT	1.00	115.0	<0.35	
05/01/2020	07:15:00	Sunday	NIGHT	1.00	115.0	<0.35	
07/01/2020	18:47:07	Tuesday	EVENING	2.00	115.0	0.50	81.9
08/01/2020	18:44:45	Wednesday	EVENING	2.00	115.0	<0.35	
08/01/2020	18:44:45	Wednesday	EVENING	2.00	115.0	<0.35	
12/01/2020	18:39:46	Sunday	EVENING	1.00	115.0	0.39	80.1
12/01/2020	18:39:46	Sunday	EVENING	1.00	115.0	0.39	80.1
13/01/2020	18:43:22	Monday	EVENING	2.00	115.0	<0.35	

14/01/2020	07:06:00	Tuesday	DAY	5.00	115.0	<0.35	
17/01/2020	14:12:24	Friday	DAY	5.00	115.0	0.66	82.9
19/01/2020	06:50:00	Sunday	NIGHT	1.00	115.0	<0.35	
19/01/2020	19:03:18	Sunday	EVENING	1.00	115.0	0.71	85.8
19/01/2020	19:03:18	Sunday	EVENING	1.00	115.0	0.71	85.8
20/01/2020	03:00:00	Monday	NIGHT	1.00	115.0	<0.35	
21/01/2020	06:35:00	Tuesday	NIGHT	1.00	115.0	<0.35	
22/01/2020	07:05:00	Wednesday	DAY	5.00	115.0	<0.35	
22/01/2020	07:05:00	Wednesday	DAY	5.00	115.0	<0.35	
22/01/2020	18:37:41	Wednesday	EVENING	2.00	115.0	0.74	82.9
23/01/2020	06:51:00	Thursday	NIGHT	1.00	115.0	<0.35	
24/01/2020	06:50:00	Friday	NIGHT	1.00	115.0	<0.35	
25/01/2020	06:52:35	Saturday	NIGHT	1.00	115.0	<0.35	
27/01/2020 (PH)	06:50:00	Monday	NIGHT	1.00	115.0	<0.35	
28/01/2020	06:50:00	Tuesday	NIGHT	1.00	115.0	<0.35	
28/01/2020	18:59:51	Tuesday	EVENING	2.00	115.0	0.40	93.1
28/01/2020	18:59:51	Tuesday	EVENING	2.00	115.0	0.40	93.1
02/02/2020	06:46:33	Sunday	NIGHT	1.00	115.0	0.39	80.0
03/02/2020	06:50:00	Monday	NIGHT	1.00	115.0	<0.35	
04/02/2020	06:40:00	Tuesday	NIGHT	1.00	115.0	<0.35	
05/02/2020	06:22:00	Wednesday	NIGHT	1.00	115.0	<0.35	
06/02/2020	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
06/02/2020	06:50:00	Thursday	NIGHT	1.00	115.0	<0.35	
06/02/2020	18:43:58	Thursday	EVENING	2.00	115.0	0.40	85.0
07/02/2020	07:00:00	Friday	DAY	5.00	115.0	<0.35	
08/02/2020	07:25:00	Saturday	DAY	5.00	115.0	<0.35	
08/02/2020	07:25:00	Saturday	DAY	5.00	115.0	<0.35	
08/02/2020	07:25:00	Saturday	DAY	5.00	115.0	<0.35	
09/02/2020	06:45:00	Sunday	NIGHT	1.00	115.0	<0.35	
09/02/2020	18:41:32	Sunday	EVENING	1.00	115.0	0.53	92.8
10/02/2020	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
11/02/2020	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
11/02/2020	18:29:52	Tuesday	EVENING	2.00	115.0	0.45	81.3
12/02/2020	07:56:45	Wednesday	DAY	5.00	115.0	<0.35	
13/02/2020	18:40:00	Thursday	EVENING	2.00	115.0	<0.35	
15/02/2020	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
15/02/2020	19:00:00	Saturday	EVENING	2.00	115.0	<0.35	
17/02/2020	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
17/02/2020	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
17/02/2020	18:40:34	Monday	EVENING	2.00	115.0	0.42	87.3
18/02/2020	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
20/02/2020	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
21/02/2020	06:42:30	Friday	NIGHT	1.00	115.0	<0.35	
22/02/2020	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
26/02/2020	06:35:50	Wednesday	NIGHT	1.00	115.0	<0.35	
26/02/2020	06:35:50	Wednesday	NIGHT	1.00	115.0	<0.35	
27/02/2020	07:26:55	Thursday	DAY	5.00	115.0	<0.35	
28/02/2020	06:54:05	Friday	NIGHT	1.00	115.0	<0.35	
29/02/2020	06:55:00	Saturday	NIGHT	1.00	115.0	<0.35	
29/02/2020	18:44:20	Saturday	EVENING	2.00	115.0	0.93	85.4
01/03/2020	18:39:22	Sunday	EVENING	1.00	115.0	0.91	84.6
02/03/2020	18:40:02	Monday	EVENING	2.00	115.0	0.44	80.1
03/03/2020	06:45:00	Tuesday	NIGHT	1.00	115.0	<0.35	
03/03/2020	18:30:56	Tuesday	EVENING	2.00	115.0	0.52	83.5
04/03/2020	06:30:00	Wednesday	NIGHT	1.00	115.0	<0.35	
04/03/2020	06:30:00	Wednesday	NIGHT	1.00	115.0	<0.35	
05/03/2020	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
05/03/2020	18:34:15	Thursday	EVENING	2.00	115.0	0.60	83.5

06/03/2020	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
06/03/2020	18:37:00	Friday	EVENING	2.00	115.0	<0.35	
06/03/2020	18:37:00	Friday	EVENING	2.00	115.0	<0.35	
07/03/2020	06:45:00	Saturday	NIGHT	1.00	115.0	<0.35	
07/03/2020	13:57:23	Saturday	DAY	5.00	115.0	0.50	80.7
07/03/2020	18:49:50	Saturday	EVENING	2.00	115.0	0.44	79.4
08/03/2020	06:45:48	Sunday	NIGHT	1.00	115.0	<0.35	
09/03/2020	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
09/03/2020	06:45:00	Monday	NIGHT	1.00	115.0	<0.35	
09/03/2020	18:48:08	Monday	EVENING	2.00	115.0	0.35	83.5
10/03/2020	06:55:00	Tuesday	NIGHT	1.00	115.0	<0.35	
11/03/2020	06:44:35	Wednesday	NIGHT	1.00	115.0	<0.35	
11/03/2020	06:44:35	Wednesday	NIGHT	1.00	115.0	<0.35	
12/03/2020	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
12/03/2020	06:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
12/03/2020	18:44:32	Thursday	EVENING	2.00	115.0	0.43	81.9
13/03/2020	06:45:00	Friday	NIGHT	1.00	115.0	<0.35	
14/03/2020	06:35:00	Saturday	NIGHT	1.00	115.0	<0.35	
15/03/2020	06:35:00	Sunday	NIGHT	1.00	115.0	<0.35	
16/03/2020	07:00:00	Monday	DAY	5.00	115.0	<0.35	
16/03/2020	07:00:00	Monday	DAY	5.00	115.0	<0.35	
16/03/2020	18:59:28	Monday	EVENING	2.00	115.0	0.34	78.6
17/03/2020	18:33:00	Tuesday	EVENING	2.00	115.0	<0.35	
18/03/2020	06:30:00	Wednesday	NIGHT	1.00	115.0	<0.35	
19/03/2020	06:40:00	Thursday	NIGHT	1.00	115.0	<0.35	
19/03/2020	06:40:00	Thursday	NIGHT	1.00	115.0	<0.35	
20/03/2020	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
20/03/2020	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
20/03/2020	18:40:00	Friday	EVENING	2.00	115.0	<0.35	
21/03/2020	06:42:00	Saturday	NIGHT	1.00	115.0	<0.35	
22/03/2020	06:35:00	Sunday	NIGHT	1.00	115.0	<0.35	
22/03/2020	06:35:00	Sunday	NIGHT	1.00	115.0	<0.35	
23/03/2020	02:20:00	Monday	NIGHT	1.00	115.0	<0.35	
23/03/2020	14:14:02	Monday	DAY	5.00	115.0	0.90	91.2
24/03/2020	00:13:00	Tuesday	NIGHT	1.00	115.0	<0.35	
24/03/2020	00:13:00	Tuesday	NIGHT	1.00	115.0	<0.35	
24/03/2020	06:37:00	Tuesday	NIGHT	1.00	115.0	<0.35	
25/03/2020	06:45:00	Wednesday	NIGHT	1.00	115.0	<0.35	
25/03/2020	06:45:00	Wednesday	NIGHT	1.00	115.0	<0.35	
26/03/2020	06:40:00	Thursday	NIGHT	1.00	115.0	<0.35	
27/03/2020	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
27/03/2020	06:40:00	Friday	NIGHT	1.00	115.0	<0.35	
27/03/2020	07:25:00	Friday	DAY	5.00	115.0	<0.35	
27/03/2020	13:37:18	Friday	DAY	5.00	115.0	0.33	88.0
28/03/2020	05:15:00	Saturday	NIGHT	1.00	115.0	<0.35	
28/03/2020	05:15:00	Saturday	NIGHT	1.00	115.0	<0.35	
29/03/2020	03:50:00	Sunday	NIGHT	1.00	115.0	<0.35	
29/03/2020	18:02:20	Sunday	EVENING	1.00	115.0	0.33	88.0
30/03/2020	02:15:00	Monday	NIGHT	1.00	115.0	<0.35	
30/03/2020	13:36:40	Monday	DAY	5.00	115.0	<0.35	
31/03/2020	06:10:00	Tuesday	NIGHT	1.00	115.0	<0.35	
31/03/2020	06:10:00	Tuesday	NIGHT	1.00	115.0	<0.35	
01/04/2020	02:30:00	Wednesday	NIGHT	1.00	115.0	<0.35	
02/04/2020	00:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
02/04/2020	16:00:00	Thursday	DAY	5.00	115.0	<0.35	
03/04/2020	12:05:00	Friday	DAY	5.00	115.0	<0.35	
03/04/2020	12:05:00	Friday	DAY	5.00	115.0	<0.35	
04/04/2020	01:00:00	Saturday	NIGHT	1.00	115.0	<0.35	

05/04/2020	11:14:12	Sunday	DAY	1.00	115.0	0.80	88.0
06/04/2020	02:30:00	Monday	NIGHT	1.00	115.0	<0.35	
07/04/2020	02:15:00	Tuesday	NIGHT	1.00	115.0	<0.35	
08/04/2020	15:22:07	Wednesday	DAY	5.00	115.0	0.72	88.0
09/04/2020	14:08:16	Thursday	DAY	5.00	115.0	0.37	88.0
10/04/2020 (PH)	01:00:00	Friday	NIGHT	1.00	115.0	<0.35	
11/04/2020 (PH)	17:54:06	Saturday	DAY	1.00	115.0	0.84	88.0
12/04/2020 (PH)	02:05:00	Sunday	NIGHT	1.00	115.0	<0.35	
13/04/2020 (PH)	09:50:00	Monday	DAY	1.00	115.0	<0.35	
13/04/2020	21:05:00	Monday	EVENING	2.00	115.0	<0.35	
14/04/2020	01:00:00	Tuesday	NIGHT	1.00	115.0	<0.35	
16/04/2020	05:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
17/04/2020	00:13:00	Friday	NIGHT	1.00	115.0	<0.35	
18/04/2020	22:50:00	Saturday	NIGHT	1.00	115.0	<0.35	
19/04/2020	11:35:00	Sunday	DAY	1.00	115.0	<0.35	
19/04/2020	23:50:00	Sunday	NIGHT	1.00	115.0	<0.35	
20/04/2020	10:42:20	Monday	DAY	5.00	115.0	0.61	88.7
20/04/2020	22:45:00	Monday	NIGHT	1.00	115.0	<0.35	
21/04/2020	10:50:00	Tuesday	DAY	5.00	115.0	<0.35	
21/04/2020	23:00:00	Tuesday	NIGHT	1.00	115.0	<0.35	
22/04/2020	23:20:00	Wednesday	NIGHT	1.00	115.0	<0.35	
23/04/2020	22:45:00	Thursday	NIGHT	1.00	115.0	<0.35	
25/04/2020 (PH)	18:09:19	Saturday	EVENING	1.00	115.0	<0.35	
27/04/2020	12:11:14	Monday	DAY	5.00	115.0	0.37	88.0
28/04/2020	23:36:00	Tuesday	NIGHT	1.00	115.0	<0.35	
29/04/2020	18:01:23	Wednesday	EVENING	2.00	115.0	0.33	88.0
02/05/2020	13:02:32	Saturday	DAY	5.00	115.0	0.73	88.0
05/05/2020	11:02:41	Tuesday	DAY	5.00	115.0	0.72	88.0
06/05/2020	02:20:00	Wednesday	NIGHT	1.00	115.0	<0.35	
08/05/2020	01:45:00	Friday	NIGHT	1.00	115.0	<0.35	
08/05/2020	01:45:00	Friday	NIGHT	1.00	115.0	<0.35	
08/05/2020	01:45:00	Friday	NIGHT	1.00	115.0	<0.35	
08/05/2020	01:45:00	Friday	NIGHT	1.00	115.0	<0.35	
08/05/2020	06:25:00	Friday	NIGHT	1.00	115.0	<0.35	
08/05/2020	11:32:29	Friday	DAY	5.00	115.0	1.13	91.1
10/05/2020	04:24:00	Sunday	NIGHT	1.00	115.0	<0.35	
10/05/2020	04:24:00	Sunday	NIGHT	1.00	115.0	<0.35	
12/05/2020	00:07:00	Tuesday	NIGHT	1.00	115.0	<0.35	
12/05/2020	13:22:40	Tuesday	DAY	5.00	115.0	0.54	88.0
13/05/2020	05:56:25	Wednesday	NIGHT	1.00	115.0	<0.35	
14/05/2020	16:26:45	Thursday	DAY	5.00	115.0	<0.35	
15/05/2020	18:29:27	Friday	EVENING	2.00	115.0	1.12	88.0

Appendix C Attended Noise Monitoring Report

Noise Monitoring Assessment

Hera Gold Mine
Nymagee, NSW
2019

Prepared for: Aurelia Metals Limited
January 2020
MAC190976RP1

Muller Acoustic Consulting

Document Information

Noise Monitoring Assessment

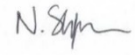
Hera Gold Mine

Nymagee, NSW

2019

Prepared for: Aurelia Metals Limited

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CONTENTS

1 INTRODUCTION 5

2 NOISE CRITERIA 7

2.1 OPERATIONAL NOISE CRITERIA 7

2.2 NOISE MONITORING LOCATIONS 7

2.3 LOW FREQUENCY NOISE CRITERIA 10

3 METHODOLOGY 13

3.1 ATTENDED NOISE MONITORING 13

4 RESULTS 15

4.1 ATTENDED NOISE MONITORING RESULTS 15

4.1.1 ATTENDED ASSESSMENT RESULTS - LOCATION NM1 15

4.1.2 ATTENDED ASSESSMENT RESULTS - LOCATION NM2 16

4.1.3 ATTENDED ASSESSMENT RESULTS - LOCATION NM3 17

5 LOW FREQUENCY NOISE ASSESSMENT 19

5.1 LOW FREQUENCY NOISE ASSESSMENT DISCUSSION 20

6 DISCUSSION OF RESULTS 21

6.1 DISCUSSION OF RESULTS - LOCATION NM1 21

6.2 DISCUSSION OF RESULTS - LOCATION NM2 21

6.3 DISCUSSION OF RESULTS - LOCATION NM3 21

7 CONCLUSION 23

APPENDIX A - GLOSSARY OF TERMS

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Aurelia Metals Ltd (AM) to complete a Noise Monitoring Assessment (NMA) for Hera Gold Mine (HGM), Nymagee, NSW.

The NMA included quantifying the noise contribution of the HGM by direct attended measurements to determine mining noise emissions.

The assessment has been conducted in accordance with the following documents:

- Department of Planning and Environment (DPE), Project Approval 10_0191 (PA), modified on September 2016.
- Aurelia Metals Limited, Noise Management Plan (NMP), approved on 19 August 2013
- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- NSW Environment Protection Authority (EPA), Environment Protection Licence EPL #20179 (EPL); and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A.**

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2 Noise Criteria

2.1 Operational Noise Criteria

The Hera Gold Mine (HGM) is located at Nymagee, NSW approximately 6 km south of the town centre. Receivers in the locality surrounding the HGM are primarily rural residential. Four residential receivers included in this assessment are located on Burthong Road.

2.2 Noise Monitoring Locations

Monitoring locations that are representative of all assessment locations were selected in accordance with the EPL and Project Approval and are representative of the nearest noise sensitive receivers to the HGM. Three monitoring locations have been selected as part of the NMA and are presented in **Table 1**.

Table 1 Noise Monitoring Locations

Monitoring Location	Receivers	Address	MGA 55 Easting, m	MGA 55 Northing, m
NM1	R1, R2	688 Burthong Road, Nymagee	434382	6444403
NM2	R3	224 Burthong Road, Nymagee	434809	6448336
NM3	R4	39 Burthong Road, Nymagee	435200	6450737

The relevant noise criteria for each noise catchment outlined in the EPL is presented in **Table 2**. **Figure 1** presents a visual representation of the assessed receivers.

Table 2 Noise Criteria, dBA

Receivers	Day[1,2]	Evening[1,2]	Night[1,2]	
	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
R1, R2, R3, R4 Burthong Road Nymagee, NSW	35	35	35	45

Note 1: Noise criteria in accordance with L4.1 of the EPL and the Project Approval.

Note 2: Day - the period from 7am to 6pm Monday to Friday; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Conditions L4.2 to L4.8 of the EPL set out the conditions under which the noise limits apply and are reproduced below.

L4.2 For the purpose of condition L4.1:

- *Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.*
- *Evening is defined as the period 6pm to 10pm.*
- *Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.*
- *LAeq(15 minute) is defined as the continuous 'A' weighted sound pressure level-the energy average of the noise measured over a 15 minute period; and*
- *LA1 (1 minute) is defined as the sound pressure level exceeded for one percent of a 1 minute measurement period.*

L4.3 The noise limits set out in condition L4.1 apply under all meteorological conditions except for the following:

- *Wind speeds greater than 3m/second at 10 metres above ground level;*
- *Stability category G temperature inversion conditions and wind speeds greater than 2m/second at 10 metres above ground level;*

L4.4 For the purposes of condition L4.3:

- *The meteorological data to be used for determining meteorological conditions is the data recorded by the on-site meteorological weather station at the Hera project site at Nymagee.*
- *Temperature inversion will be assessed by use of the sigma-theta process as outlined in Appendix E4 of the NSW Industrial Noise Policy (INP).*

L4.5 For the purpose of determining the noise generated at the premises Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing, must be used.

L4.6 To determine compliance:

a) With the $LA_{eq(15min)}$ noise limits in condition L4.1, the noise measurement equipment must be located:

- *within 30 metres of a dwelling façade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises;*
- *approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises;*
- *within approximately 50 metres of the boundary of a National Park or a Nature Reserve.*

b) With the $LA_{1(1\ minute)}$ noise limits in condition L4.1; the noise monitoring equipment must be located within 1 metre of a dwelling façade.

c) The noise monitoring equipment must be located in a position that is:

- *at the most affected point at a location where there is no dwelling at the location; or*
- *at the most affected point within an area at a location prescribed by conditions L4.6(a) or L4.6(b).*

L4.7 A breach of this Environmental Protection License will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition L4.1 is detected:

- *at a location other than an area prescribed by conditions L4.6(a) and L4.6(b); and/or*
- *at a point other than the most affected point at a location.*

L4.8 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy (INP) must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

2.3 Low Frequency Noise Criteria

Section L4.8 of the EPL states that modifying factor adjustments outlined in Fact Sheet C of the NPI requires an assessment of low frequency (LF) noise generated by HGM to be quantified. The LF requirement is reproduced below along with one third octave $LZ_{eq(15min)}$ thresholds presented in Table 3.

Measure/assess C and A weighted Leq,T levels over the same time period. Where the C minus A level is 15dB or more and:

- *where any of the 1/3 octave noise levels in Table 4-1 are exceeded by up to 5dB and cannot be mitigated, a 2 dB(A) positive adjustment to measured/predicted A weighted levels applies for the evening/night period.*
- *where any of the 1/3 octave noise levels in Table 4-1 are exceeded by more than 5dB and cannot be mitigated, a 5 dB(A) positive adjustment to measured/predicted A weighted levels applies for the evening/night period and a 2dB positive adjustment applies for the daytime period.*

Table 3 One-third octave low frequency noise thresholds

Hz/dB(Z)	*One-third octave LZeq 15minute threshold level*												
Frequency (Hz)	*10*	*12.5*	*16*	*20*	*25*	*31.5*	*40*	*50*	*63*	*80*	*100*	*125*	*160*
dB(Z)	*92*	*89*	*86*	*77*	*69*	*61*	*54*	*50*	*50*	*48*	*48*	*46*	*44*

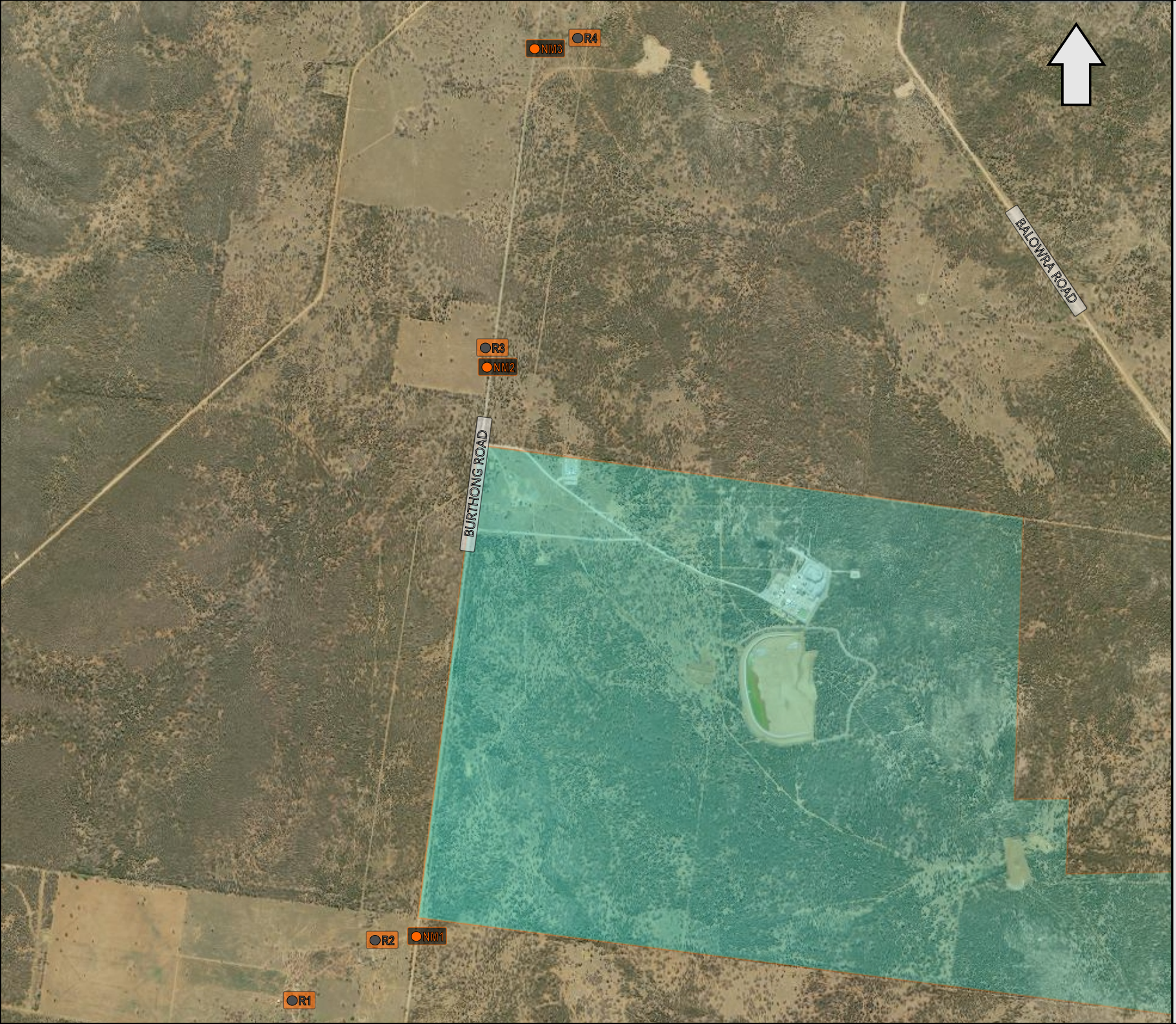


FIGURE 1

LOCALITY PLAN

REF: MAC190976

0 1.5 km

KEY

- R1 — RECEIVER LOCATION
- NM1 — NOISE MONITORING LOCATION
- SITE LOCATION

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*Imagery Source : SIX Maps

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3 Methodology

Noise monitoring consisted of operator attended monitoring during the daytime, evening and night time periods.

3.1 Attended Noise Monitoring

Operator attended noise monitoring was conducted in general accordance with the procedures described in Australian Standard AS 1055:2018. All measurements were carried out using a Svantek Type 1, 977 noise analyser on Wednesday 4 December 2019. The acoustic instrumentation used carries current NATA calibration and complies with AS IEC 61672:2019 -Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

Attended noise monitoring included one 15 minute measurement during daytime, evening and night time period. Where possible, throughout each measurement the operator quantified the contribution of each significant noise source.

Extraneous sources were excluded from the analysis to determine the $LA_{eq(15min)}$ HGM noise contribution for comparison against the relevant criteria. Where the HGM was inaudible, the GHM contribution is estimated to be at least 10dB below the ambient noise level.

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4 Results

4.1 Attended Noise Monitoring Results

4.1.1 Attended Assessment Results - Location NM1

The monitored noise level contributions and observed meteorological conditions for each assessment period at location NM1 for the NMA are presented in **Table 4**.

Table 4 Operator-Attended Noise Survey Results – Location NM1

Date	Time (hrs)	Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, dBA
		L_{Amax}	L_{A1}	L_{Aeq}	L_{A90}		
04/12/19	13:23 (Day)	63	59	51	37	WD: W WS: 2.5m/s Rain: Nil	Insects 32-38 Wind 42-67 Residential noise 42-59 Birds 38-43 HGM Inaudible
		HGM $L_{Aeq(15min)}$ Contribution					<35
04/12/19	20:34 (Evening)	61	54	39	21	WD: W WS: 1m/s Rain: Nil	Dog 38-56 Insects <22 Wind 22-23 Birds 22-28 HGM Inaudible
		GHM $L_{Aeq(15min)}$ Contribution					<35
04/12/19	22:00 (Night)	50	33	22	18	WD: W WS: 0.1m/s Rain: Nil	Insects 24-28 Birds 24-32 Traffic <24 HGM Inaudible
		HGM $L_{Aeq(15min)}$ Contribution					<35
		HGM $L_{A(1min)}$ Contribution					<40

Note: Day - the period from 7am to 6pm Monday to Friday; Evening - the period from 6pm to 10pm; Night - the remaining periods.

4.1.2 Attended Assessment Results - Location NM2

The monitored noise level contributions and observed meteorological conditions for each assessment period at location NM2 for the NMA are presented in **Table 5**.

Table 5 Operator-Attended Noise Survey Results – Location NM2

Date	Time (hrs)	Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, dBA
		L_{Amax}	L_{A1}	L_{Aeq}	L_{A90}		
04/12/19	14:02 (Day)	68	59	49	36	WD: W WS: 2.5m/s Rain: Nil	Insects <38 Wind 38-50 Traffic 42-65 HGM Inaudible
		HGM $L_{Aeq(15min)}$ Contribution					<35
04/12/19	20:59 (Evening)	47	33	25	21	WD: W WS: 0.5m/s Rain: Nil	Insects 20-23 Traffic <22 Operator 36-42 HGM hum 20-22
		HGM $L_{Aeq(15min)}$ Contribution					<22
04/12/19	22:26 (Night)	47	32	27	24	WD: W WS: 0.1m/s Rain: Nil	Insects 22-26 Birds 24-36 HGM general hum 24-26
		HGM $L_{Aeq(15min)}$ Contribution					<25
		HGM $L_{A(1min)}$ Contribution					<30

Note: Day - the period from 7am to 6pm Monday to Friday; Evening - the period from 6pm to 10pm; Night - the remaining periods.

4.1.3 Attended Assessment Results - Location NM3

The monitored noise level contributions and observed meteorological conditions for each assessment period at location NM3 for the NMA are presented in **Table 6**.

Table 6 Operator-Attended Noise Survey Results – Location NM3

Date	Time (hrs)	Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, Dba
		L_{Amax}	L_{A1}	L_{Aeq}	L_{A90}		
04/12/19	14:28 (Day)	81	55	52	37	WD: W WS: 2m/s Rain: Nil	Wind 33-42 Insects 32-34 Birds 34-36 Traffic 38-81 HGM Inaudible
		HGM $L_{Aeq(15min)}$ Contribution					<30
04/12/19	21:21 (Evening)	56	35	28	24	WD: W WS: 0.1m/s Rain: Nil	Insects 25-28 Aircraft 28-34 Traffic 28-36 HGM hum <25
		HGM $L_{Aeq(15min)}$ Contribution					<30
04/12/19	22:46 (Night)	49	39	28	20	WD: W WS: 0.1m/s Rain: Nil	Insects 22-26 Birds 24-28 Aircraft 28-49 HGM hum <24
		HGM $L_{Aeq(15min)}$ Contribution					<30
		HGM $L_{A(1min)}$ Contribution					<40

Note: Day - the period from 7am to 6pm Monday to Friday; Evening - the period from 6pm to 10pm; Night - the remaining periods.

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5 Low Frequency Noise Assessment

The low-frequency assessment summary for each monitoring location NM1 to NM3 are presented in **Table 7** to **Table 9** for each assessment period.

Table 7 Daytime Low Frequency Compliance Assessment

Receiver No.	dB $LC_{eq(15min)}$	dB $LA_{eq(15min)}$	Difference	Mitigation Trigger
NM1	77	51	26	✓
NM2	46	39	7	×
NM3	35	22	13	×

Note: Day - the period from 7am to 6pm Monday to Saturday, 8am to 6pm Sundays and public holidays.

Table 8 Evening Low Frequency Compliance Assessment

Receiver No.	dB $LC_{eq(15min)}$	dB $LA_{eq(15min)}$	Difference	Mitigation Trigger
NM1	76	49	27	✓
NM2	47	25	22	✓
NM3	51	27	24	✓

Note: Evening - the period from 6pm to 10pm Monday to Sunday.

Table 9 Night Low Frequency Compliance Assessment

Receiver No.	dB $LC_{eq(15min)}$	dB $LA_{eq(15min)}$	Difference	Mitigation Trigger
NM1	67	52	15	✓
NM2	48	28	20	✓
NM3	47	28	19	✓

Note: Night - the period from 10pm to 7am Monday to Saturday, 10pm to 8am Sundays and public holidays.

5.1 Low Frequency Noise Assessment Discussion

The $LC_{eq(15min)}$ exceeded the $LA_{eq(15min)}$ by more than 15dB on seven occasions during the NMA. HGM was audible during four of the seven occasions. The measured third octave data has been reproduced against the Low frequency criteria in **Table 10**. HGM remained below relevant third octave criteria for all measurements, and therefore no further mitigation measures are required.

The remaining measurements with 15dB difference between $LC_{eq(15min)}$ and $LA_{eq(15min)}$ levels are attributed to other non-site related sources such as road traffic, which was audible throughout the three measurements, and therefore no mitigation measure is required.

Table 10 One-third octave $LZ_{eq(15min)}$ threshold level

Criteria	Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
	dB (Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Measurement	NM2 (Evening)	31	31	54	37	34	38	26	27	30	25	23	21	31
Measurement	NM2 (Night)	34	36	58	40	35	40	29	32	32	34	28	29	34
Measurement	NM3 (Evening)	30	31	55	36	36	38	33	32	30	29	29	29	30
Measurement	NM3 (Night)	33	35	54	38	36	36	34	33	31	30	29	28	33

6 Discussion of Results

6.1 Discussion of Results - Location NM1

HGM noise emissions were inaudible during all three measurements conducted on Wednesday 4 December 2019. Therefore, HGM contribution was estimated to be <35dBA satisfying the relevant noise limits. Extraneous noise sources included insects, wind, residential noise, birds, dog barking and traffic.

6.2 Discussion of Results - Location NM2

HGM noise emissions were audible during two of three measurements at NM2 conducted on Wednesday 4 December 2019. HGM contribution was barely audible during evening and night measurements. Contributions were estimated to be below 30dBA during both occasions on Wednesday 4 December 2019. HGM low frequency contribution was also satisfied as measurements remained below relevant third octave criteria. Extraneous noise sources included wind in trees, insects, birds, traffic and aircraft noise.

6.3 Discussion of Results - Location NM3

HGM noise emissions were audible during two of three measurements at NM3 conducted on Wednesday 4 December 2019. HGM contribution was barely audible during evening and night measurements. Contributions were estimated to be below 30dBA during both occasions on Wednesday 4 December 2019. HGM low frequency contribution was also satisfied as measurements remained below relevant third octave criteria. Extraneous noise sources included traffic, insects, wind, birds and operator noise.

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7 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) on behalf of Aurelia Metals Limited for the Hera Gold Mine (HGM), at Nymagee, NSW. The assessment was completed to assess compliance with the relevant noise criteria for EPL #20179.

Attended noise monitoring was completed on Wednesday 4 December 2019 at three representative monitoring locations. The assessment has identified that noise emissions generated by HGM were occasionally audible, although remained below relevant noise criteria at all assessed receivers.

An assessment of low frequency noise was also completed and identified compliance with the relevant criteria.

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Appendix A - Glossary of Terms

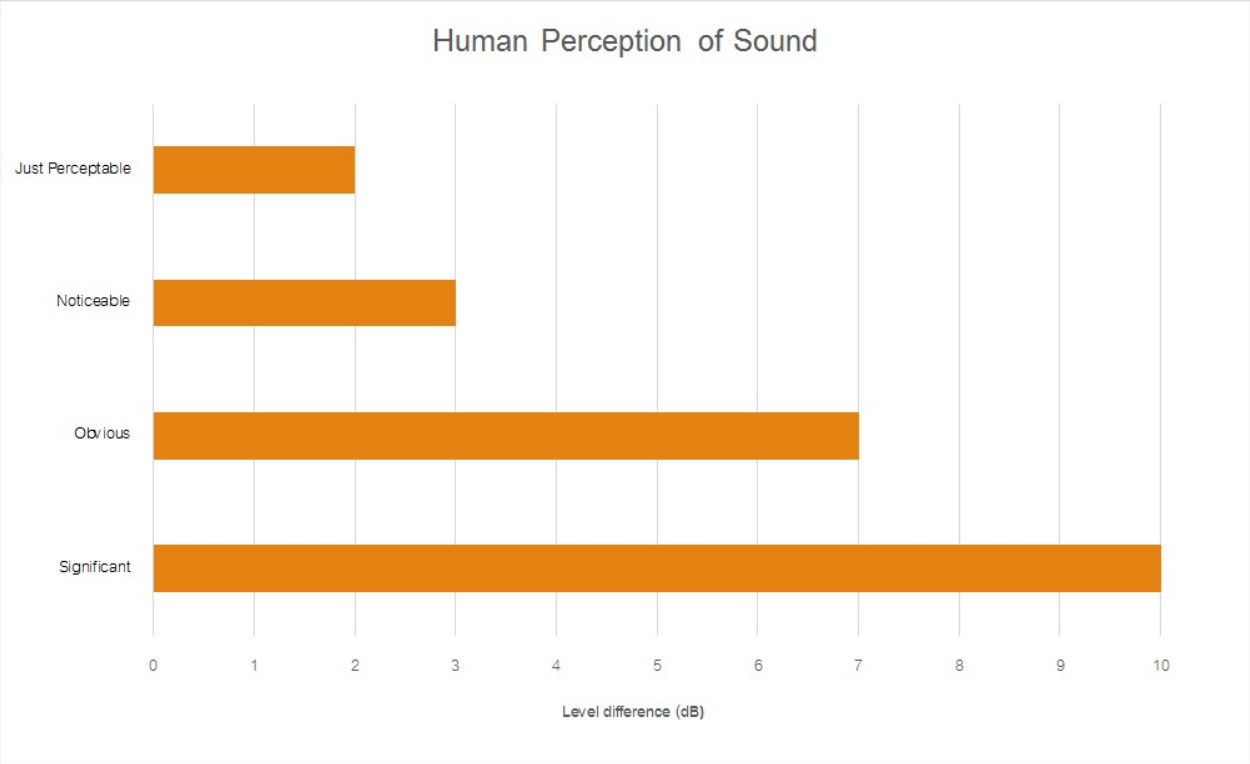
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAmax	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by: = 10.log10 (W/Wo) Where: W is the sound power in watts and Wo is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

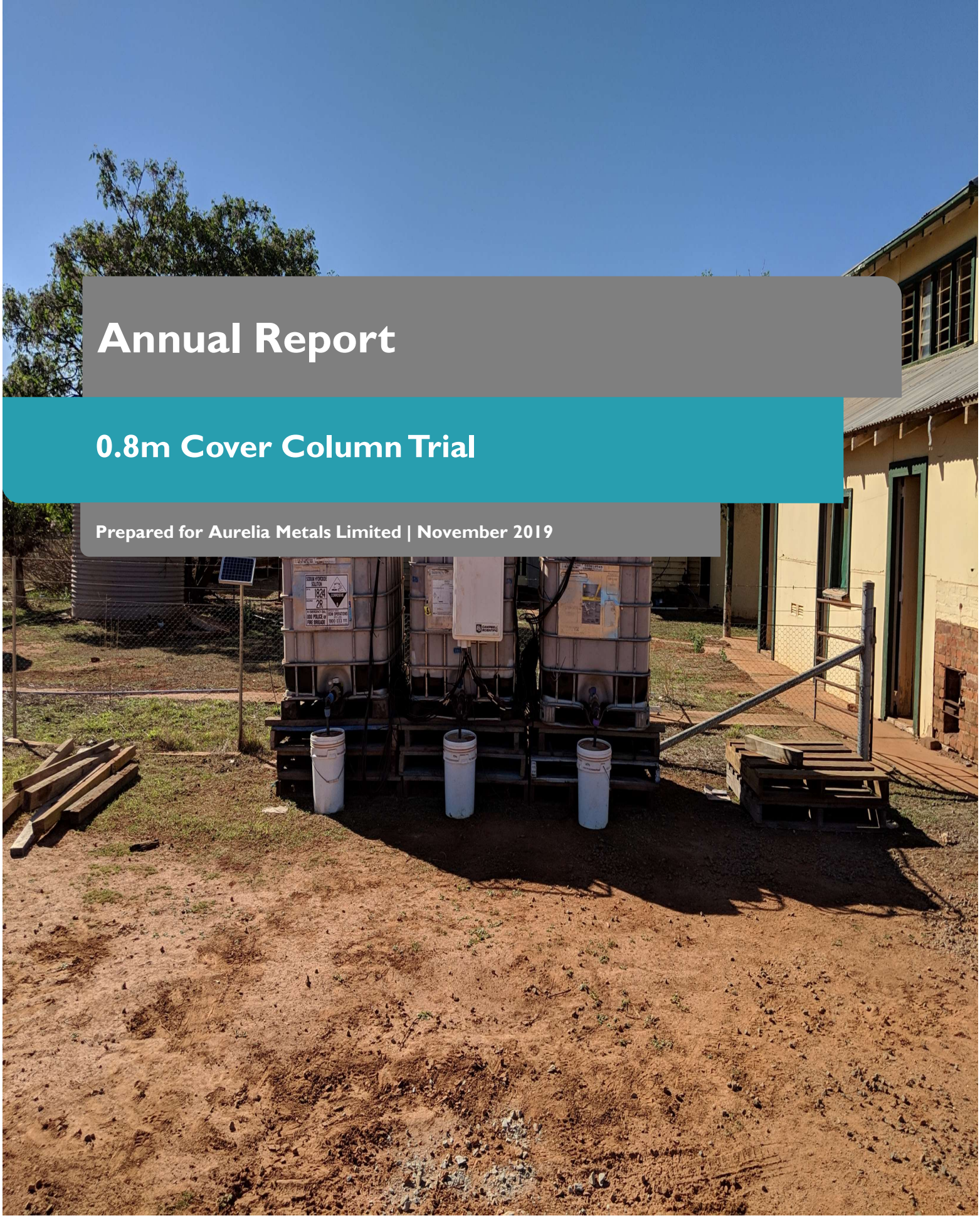
Figure A1 – Human Perception of Sound



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Appendix D SGM Environmental, Annual Report Cover Column Trials



Annual Report

0.8m Cover Column Trial

Prepared for Aurelia Metals Limited | November 2019

aurelia METALS Ltd.

SGMenvironmental

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Annual Report

0.8 m Cover Column Trial

Hera Mine

Prepared for Aurelia Metals Limited| 25 November 2019

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Document title:	Annual Report	0.8 m Cover Column Trial	Hera Mine
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Date:	25 November 2019
Client:	Aurelia Metals Limited
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Document history and status

Revision	Date	Description	By	Review	Approved
V0-1	28 October 2019	Draft	N Jamson	T Rohde	T Rohde
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Table of Contents

1.0 Introduction 7
1.1 Location and history of operation 7
1.2 Mine description 7
1.3 Rehabilitation of the TSF 7
1.3.1 Past TSF cover trials 8
1.4 Scope and report structure 8
2.0 Abbreviations 10
3.0 The trial 11
3.1 Method 11
3.1.1 Decommissioning the 0.2 m cover column trial 11
3.1.2 Construction of the 0.8 m cover column trial 11
3.2 Results and discussion 14
3.2.1 Stored infiltration 14
3.2.2 Seepage 14
3.2.3 Water balance 15
4.0 Semi-calibrated SVFlux modelling 16
4.1 Method 16
4.1.1 Model dimensions 16
4.1.2 Mesh geometry 16
4.1.3 Initial conditions 17
4.1.4 Analysis method 18
4.2 Results 18
4.2.1 Water balance 20
4.2.2 Future cover performance 20
4.2.3 Sensitivity analysis 21

Table of Contents

5.0	Comparison to past cover trials	22
	5.1 Recommended cover	22
6.0	Conclusions and recommendations	23
	6.1 Recommendations	23
References		24

Appendix

A		25
B		73

Photograph

1	The trial	11
2	Building the filter layer	12

Figure

1	Location of the Mine	9
2	Burial depth of sensors	13
3	Total rainfall applied to the trial	13
4	Stored infiltration in the trial	14
5	Seepage from the trial	15
6	Model dimensions	16
7	Fitted soil SWCC	17
8	Model results compared to cover column trials	19
9	The trial VWC results	28

Table of Contents

Table		
1	Abbreviations	10
2	Maximum water balance for the trial	15
3	Annual rainfall for model scenarios	18
4	Water balance summary for artificial rainfall	20
5	Summary of 0.8 m cover water balance for average, wet and dry years	20
6	Summary of 1 m cover water balance for average, wet and dry years	21
7	Summary of 0.6 m cover water balance for average, wet and dry years	22
8	Summary of 0.4 m cover water balance for average, wet and dry years	22
9	Summary of 0.2 m cover water balance for average, wet and dry years	22

Important note about your report

The sole purpose of this report and the associated services performed by SGM environmental Pty Limited (SGME) is to prepare an annual report describing the results from the 0.8 metre (m) cover column trial at Hera Mine (the scope of work) in accordance with the scope of services set out in the contract between SGME and Aurelia Metals Limited. That scope of services, as described in this report, was developed with the Client.

In preparing this report, SGME has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by Aurelia Metals Limited and / or from other sources. Except as otherwise stated in the report, SGME has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

SGME derived the data in this report from information sourced from Aurelia Metals Limited, designated laboratories and / or information that has been made available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the field data and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report.

SGME has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by SGME for use of any part of this report in any other context.

Reporting of the results of the 0.8 m cover column trial at Hera Mine is based on a desktop assessment of data that has been measured by Aurelia Metals Limited and other third parties.

This report has been prepared on behalf of, and for the exclusive use of, Aurelia Metals Limited, and is subject to, and issued in accordance with, the provisions of the contract between SGME and Aurelia Metals Limited.

SGME accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

Executive summary

This study has shown through a cover column trial and a semi-calibrated model, that a 0.8 metre (m) cover over the tailings storage facility (TSF) at Hera Gold (Au)-Lead (Pb)-Zinc (Zn) Underground Mine (the Mine) will significantly reduce the potential for rainfall infiltration into the potentially acid forming (PAF) tailings. A reduction of rainfall infiltration will limit the potential for environmental harm through acid mine drainage (AMD).

The 0.8 m cover column trial (the trial) was commissioned in October 2018 and was subjected to approximately (~) 413 millimetres (mm) of artificial and natural rainfall over a seven-month period to develop a maximum water balance. The water balance of the trial was measured by calibrated matric suction and volumetric water content (VWC) sensors. Seepage from the base of the trial was measured by a rain gauge tipping bucket and the bottom VWC sensor. The trial showed that seepage was limited to 0.36% (tipping buckets).

Following the trial, the maximum water balance was used to develop a semi-calibrated model in SVFlux (the model). The model used the average soil water characteristic curve (SWCC) from past cover column trials. Saturated hydraulic conductivities and potential evaporation rates were derived from the trial itself. The semi-calibrated model showed a good correlation to the observed results and it was accepted that the semi-calibrated model could be used to predict the long-term performance of the cover.

The trial's performance was simulated for a wet, average and dry year to predict the likely long-term performance had the 0.8 m cover been built on the TSF. Seepage was predicted to be well under 1% in the long term.

Finally, a comparison of the trial and past cover column trials showed that a large improvement in performance from 0.4 m to 0.6 m thickness is likely. Increasing the cover thickness from 0.6 m to 0.8 m is likely to improve seepage from less than 1% to near 0%. The sensitivity analysis showed that cover performance is unlikely to improve beyond 0.8 m, and may start to decline at cover thicknesses equal to or greater than 1 m. The optimum cover thickness is therefore between 0.6-0.8 m. At this stage, the recommended cover thickness is 0.6 m. However, should additional soil be available, the cover thickness could be increased to 0.8 m.

Five recommendations are made from this study:

1. Two cover column trials (0.6 m and 0.8 m), should be decommissioned and recommissioned in large steel columns. This will allow the covers to be trialled long-term without the risk of shrinking and swelling of the fill (as was observed in the 0.8 m trial). It will also increase the likelihood that the data collected is accurate before the preferred cover is progressed to a large field trial on the TSF.
2. During the decommissioning, the covers should be assessed to determine whether capillary rise of salts and metals into the covers has occurred. Capillary rise could limit the establishment and growth of vegetation and ultimately, impact cover performance. Testing for capillary rise would involve sampling of the cover and analysis for acidity, salts and metals.
3. Artificial watering should cease, and all three cover column trials seeded to establish vegetation. This will allow the water balance to be further refined, including the prediction of long-term performance by adjusting the water balance for evapotranspiration.
4. A material balance should be conducted to determine if there is enough soil available to construct the recommended covers.
5. Large field trials should be established and monitored prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

1.0 Introduction

1.1 Location and history of operation

The Hera Gold (Au)-Lead (Pb)-Zinc (Zn) Underground Mine (the Mine) is owned by Aurelia Metals Limited (formerly YTC Resources Limited) and operated by its 100% owned subsidiary, Hera Resources Pty Limited (the Company) and is 100 kilometres (km) south-east of Cobar, central New South Wales (NSW) (Figure 1).

The Hera deposit was first discovered by CBH Resources Limited in 2001 before being acquired by the Company in 2009. The New South Wales (NSW) government approved the Mine development in 2012 and the Mine commenced first production in 2014 with commercial production achieved in 2015. In 2016, the Mine produced approximately (~) 46,000 ounces (oz) of Au and 25,000 tonnes (t) of Pb-Zn concentrate from the processing of 308,000 t of ore.

1.2 Mine description

The Mine is accessed through an initial box cut, portal and decline, the waste rock from which is temporarily stored in the waste rock emplacement area (WRE) adjacent to the mine industrial area. The current operational plan is to return all waste rock to either the underground workings or to use it for further lifts of the tailings storage facility (TSF).

The Mine is operated by longhole, open-stoping with waste rock reinjected as rock pillars to divide the underground workings into discreet stoping areas. The ore is crushed by a three-stage crushing circuit before processing by gravity, flotation and leach circuits to produce Au-silver (Ag) dore. The processed ore (ie most metalliferous minerals have been removed) is pumped as thickened tailings slurry (the tailings) to a ~ 46 hectare (ha) TSF where the tailings are deposited from a series of raised spigots. Once deposited the tailings form a graded beach sloping to the east.

The tailings contain sulfide and are classified as potentially acid forming (PAF) (SGME 2018a). Water-soluble sulfate, and to a lesser extent, chloride, indicate that in the event of acid mine drainage (AMD) or neutral mine drainage (NMD), salinity would likely be an issue. The tailings contain elevated water-soluble iron (Fe), Zn, Pb, manganese (Mn), aluminium (Al), nickel (Ni), lithium (Li), thorium (Th) and uranium (U). The TSF may therefore result in acidified metal laden seepage entering the receiving environment as AMD if not managed properly.

1.3 Rehabilitation of the TSF

At closure the TSF will be rehabilitated by first allowing the tailings to desiccate and settle, followed by profiling the elevated landform so that the beach slope angle does not exceed 1(V):3(H) or 18 degrees (°). Once the tailings beach final surface has been constructed, a cover will be built over the tailings. The cover has been described in the *Hera Mine Environmental Assessment* (R.W Corkery 2011) as an impermeable compacted layer of clay and waste rock which will be free draining and shed water from the rehabilitated landform.

The *Mine Operation Plan* (the MOP) (R. W Corkery 2013) describes the cover as being 0.5 metres (m) thick.

A review of the R. W Corkery (2011 & 2013) cover concepts was completed by EMM Consulting Pty Limited (EMM) in 2016 (EMM 2016). The EMM report (EMM 2016) concluded that a cover thickness of between 0.4-1.0 m was most appropriate based on regional experience and preliminary modelling using Vadose/w (Geoslope 2012). The EMM report (EMM 2016) recommended that the Mine set up column trials to develop an early understanding of how the potential cover options (ie cover thicknesses between 0.4-1.0 m) will perform.

1.3.1 Past TSF cover trials

Three cover column trials (the original cover column trials) were commissioned by EMM in December 2017:

- a 0.2 m cover of soil;
- a 0.4 m cover of soil; and
- a 0.6 m cover of soil.

Under the guidance of SGM Environmental Pty Ltd (SGME), the original cover column trials were subjected to ~ a years' worth of rainfall over a four-month period to develop a maximum water balance. The cover column trials showed that as the cover thickness decreased, the seepage rate increased. The optimum cover thickness was found to be 0.6 m.

Using a semi-calibrated model, SGME simulated the future performance of the original cover column trials for a wet, average and dry year. The long-term prediction showed that the 0.6 m cover provided the best balance between rainfall infiltration storage and seepage. Seepage was predicted to be under 1% in the long-term. The performance of the thinner covers was less successful with the 0.4 m cover likely to allow ~ 6% seepage and the 0.2 m cover likely to allow 17% seepage.

A comparison to Australian examples of covers that have been built on mine sites showed that the 0.6 m cover was expected to perform similarly. The comparison also concluded that the optimum cover thickness for the region is between 0.4-1 m. The *Cover Column Trials – Annual Report* (SGME 2018b) is presented as Appendix A.

1.4 Scope and report structure

The scope of this report is to present the results from the 0.8 m cover column trial (the trial) that was commissioned at the Mine in October 2018. The 0.4 m and the 0.6 m cover column trial are still operational however, are not included in this report.

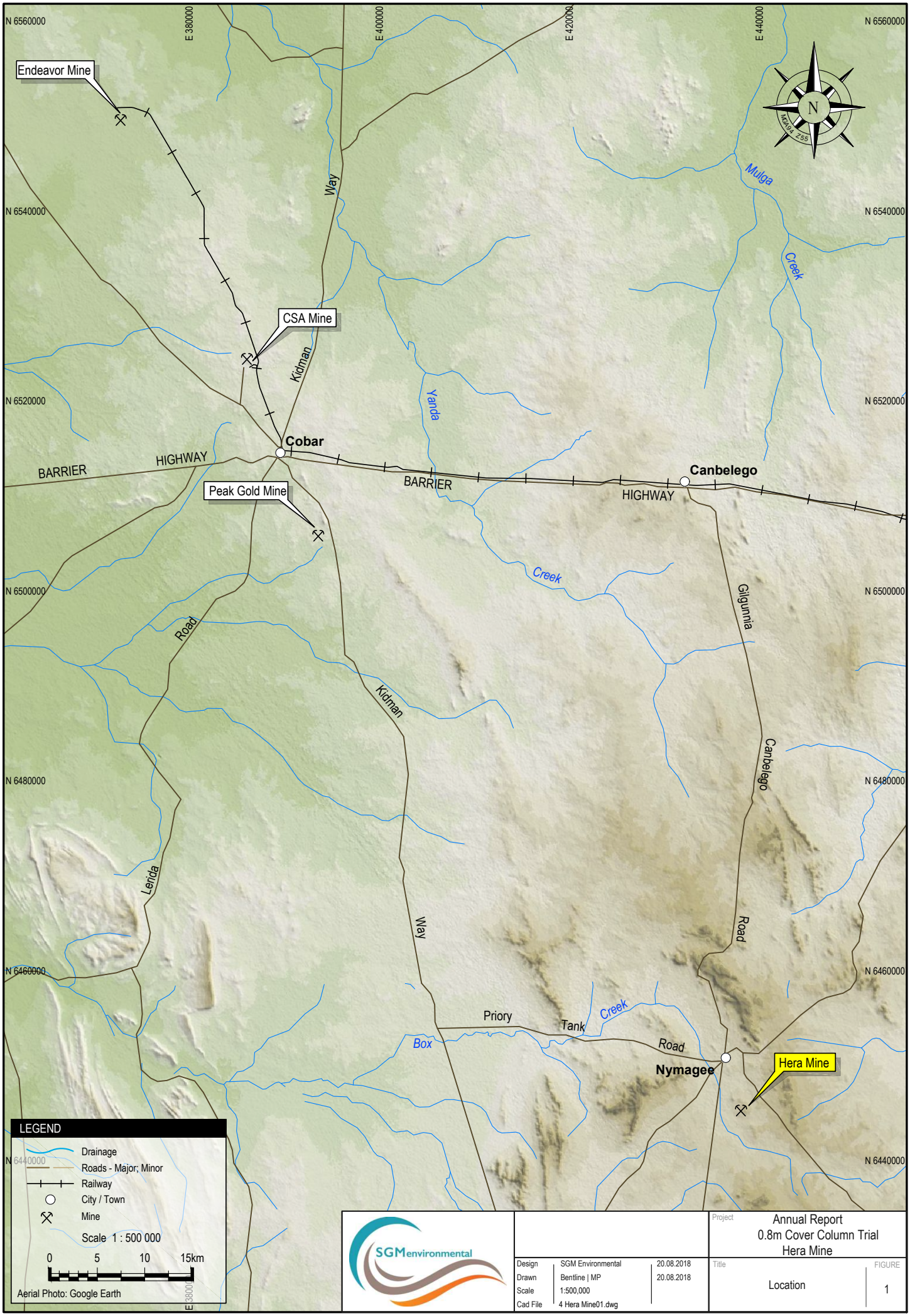
The trial was commissioned to gain an understanding of how a cover closer to the upper end of the optimum cover thickness range (0.4-1 m) suggested by SGME (2018b), will perform. The trial consisted of 0.8 m of soil.

Once constructed, the trial was artificially wet-up by manually applying water to the surface of the trial to develop a maximum water balance. The trial was also subjected to several natural rainfall events. The wetting sequence is described in Section 3.0.

The storage and loss of the artificial rainfall from the trial was monitored and has been used to develop a semi-calibrated model for the trial to predict how it would perform if constructed on the TSF. The model provides a preliminary prediction of long-term performance and this is described in Section 4.0.

A comparison of the trial and the original cover column trials is provided in Section 5.0. Section 5.0 also provides a recommendation on the preferred cover for trialling on the TSF.

Finally, the report presents conclusions and recommendations in Section 6.0.



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2.0 Abbreviations

Common abbreviations used in this report are presented in Table 1.

Table 1 Abbreviations

Term	Definition
SGME	SGM Environmental Pty Ltd
TSF	Tailings storage facility
AMD	Acid mine drainage
NMD	Neutral mine drainage
SD	Saline drainage
PAF	Potentially acid forming
NAF	Non-acid forming
EC	Electrical conductivity
VWC	Volumetric water content
IBC	Intermediate bulk container
SWCC	Soil water characteristic curve

3.0 The trial

3.1 Method

The trial was completed in three stages:

- decommissioning of the 0.2 m cover column trial;
- construction of the 0.8 m cover column trial; and
- applying artificial rainfall to develop a maximum water balance for the cover ie the maximum amount of seepage if the cover becomes near-saturated.

3.1.1 Decommissioning the 0.2 m cover column trial

The 0.2 m cover column trial was decommissioned. This involved removing the calibrated volumetric water content (VWC) and matric suction sensors from inside the intermediate bulk container (IBC) for use in the 0.8 m cover column trial. The 0.2 m cover was chosen for decommissioning as it was shown that it is unlikely to be successful in limiting seepage,

3.1.2 Construction of the 0.8 m cover column trial

The trial was constructed outside and is shown below in Photograph 1. The IBC was placed on stacked pallets which were slightly graded so that seepage flows toward a drainage tap at the base of the trial. The column is ~1 m tall and has a surface area of ~1.17 metre squared (m^2).

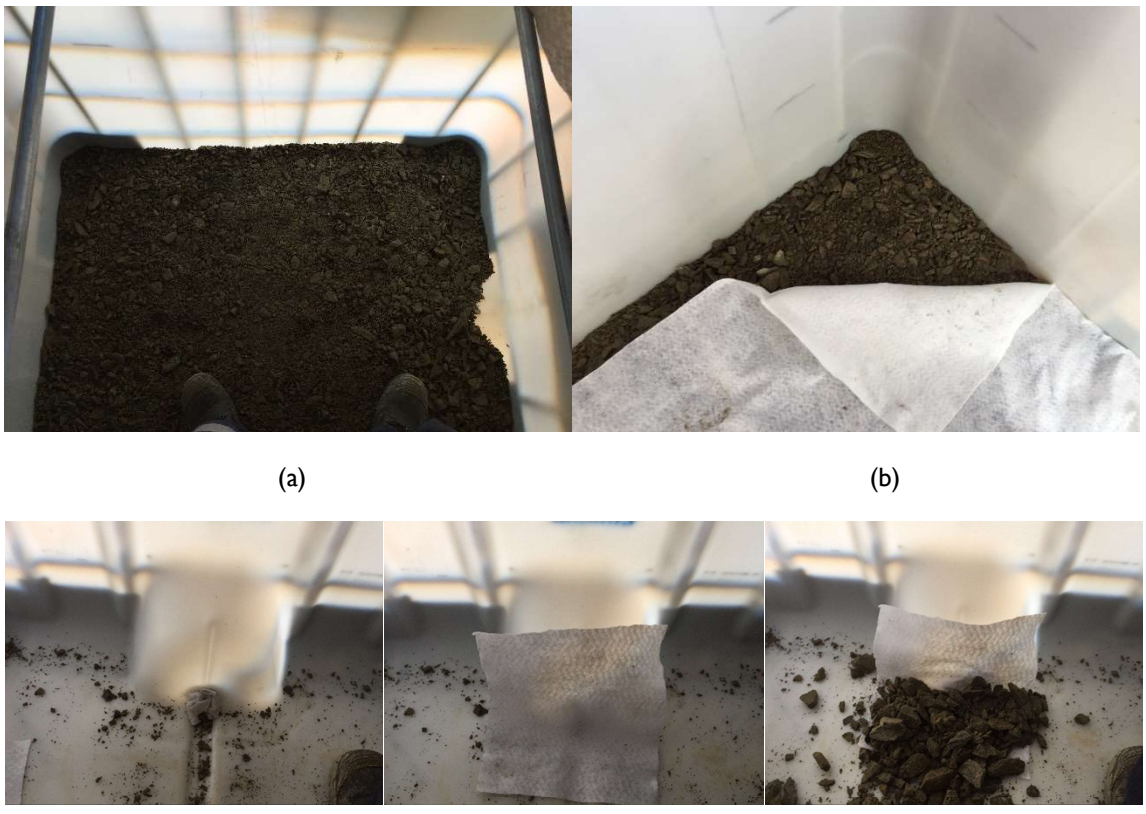


Photograph 1 The trial

3.1.2.1 Filling

The trial was made up of a soil layer which is described in the following sections.

A 0.1 m filter layer of clean gravel was placed on the bottom of the column to act as a drainage layer (Photograph 2a). Geofabric was placed on top of the filter layer to prevent soil from clogging it by migrating into the gravel pore spaces (Photograph 2b). Geofabric was also placed over the drainage tap opening to further assist in filtering potential migration of fines (Photograph 2 c,d & e).



(a) (b)

(c) (d) (e)

Photograph 2 Building the filter layer

The trial includes a 0.8 m layer of soil above the filter layer compacted to a bulk density of 1.5 tonnes per cubic metres (t/m^3). The target density was achieved by compacting 66 x 21 kilogram (kg) buckets of air dry soil into 0.94 m^3.

3.1.2.2 Installation of instruments

The trial included buried sensors in the soil layer. The buried sensors measure VWC and matric suction. The trial has four pairs of VWC and matric suction sensors buried at the depths shown in Figure 2. Noting that the fifth VWC sensor from the 0.2 m cover column trial malfunctioned towards the end of the original cover trials.

Sensor number	Burial depth
5	0.1 m
4	0.25 m
3	0.4 m
2	0.5 m

Figure 2 Burial depth of sensors

3.1.2.3 Wetting and drying

The trial was subjected to eleven artificial events over eleven months. After four artificial rainfall events, it was observed that rainfall was bypassing the cover and going straight into the drainage tap. This was due to repeated shrinking and swelling of the IBCs (due to cooling and shrinking), resulting in preferential flow paths along the interface of the IBC and the cover. Therefore, from this point on, all discussion on rainfall, seepage and water balances will relate up to and including the fourth artificial rainfall event.

The trial was subjected to four artificial rainfall events over ~seven months (totalling 204 mm). The purpose of the artificial rainfall was to allow the cover column trials to wet up and dry out so that a maximum water balance could be calculated for the trial:

- 51 (mm) artificial rainfall on day 154;
- 51 mm artificial rainfall on day 196;
- 51 mm artificial rainfall on day 209; and
- 51 mm artificial rainfall on day 223.

In addition to this, the trial was subjected to 209 mm of natural rainfall. This comprised 38 rainfall events ranging from 0.2 mm to 33 mm. This equates to a combined (artificial and natural) total rainfall of 413 mm. Artificial and natural rainfall data is shown in Figure 3.

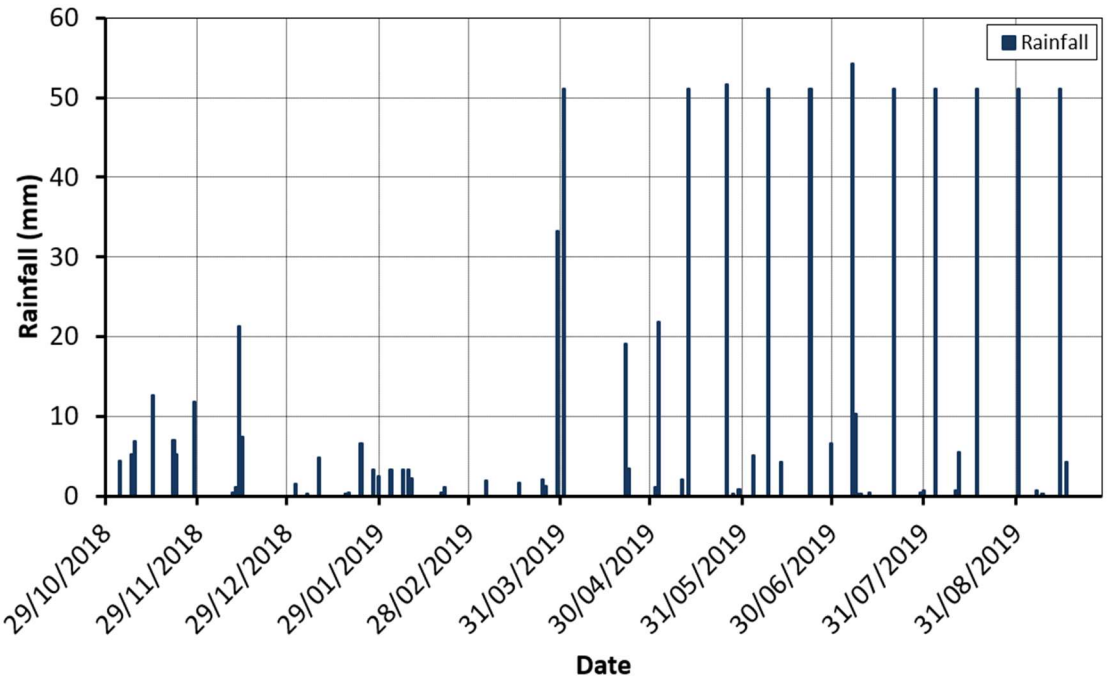


Figure 3 Total rainfall applied to the trial

3.2 Results and discussion

3.2.1 Stored infiltration

Stored infiltration in the trial can be calculated daily by multiplying the change in VWC by depth. The daily incremental change in stored infiltration (Δ SW) balances the infiltration budget daily as either wetting (+ve Δ SW) or drying (-ve Δ SW). As such, it is proportional to the rate of evaporation. Figure 4 presents the stored infiltration for the trial. The maximum stored infiltration for the trial was 23.2 mm.

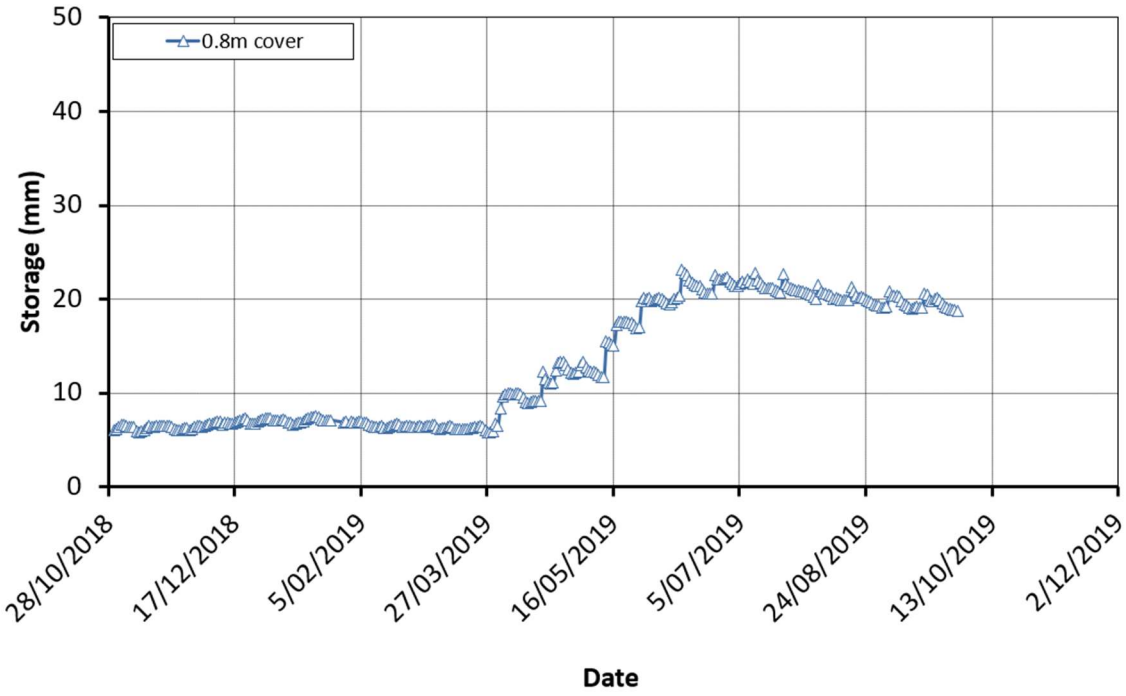


Figure 4 Stored infiltration in the trial

3.2.2 Seepage

Seepage from the trial can be calculated daily using two methods. Firstly, by measuring the number of recorded 'tips' (equal to 0.2 mm) in the rain gauge tipping buckets. This is considered the most accurate method as this directly measures seepage. Seepage can also be indirectly measured by multiplying the change in VWC by depth, for the sensor located in the base of the cover. When the daily incremental change in Δ SW is negative then it is assumed that seepage is occurring because water is moving from the cover into the filter layer and can no longer be removed by vegetation transpiration or evaporation. The disparity between these two figures is likely due to the VWC measurement occurring at ~0.5 m down in the cover while the tipping buckets measure seepage at the bottom of the cover (0.8 m) ie seepage will reach the bottom VWC sensor earlier than the tipping bucket. Seepage was limited to between 0.36% (tipping buckets) and 3.45% (VWC method) (Figure 5).

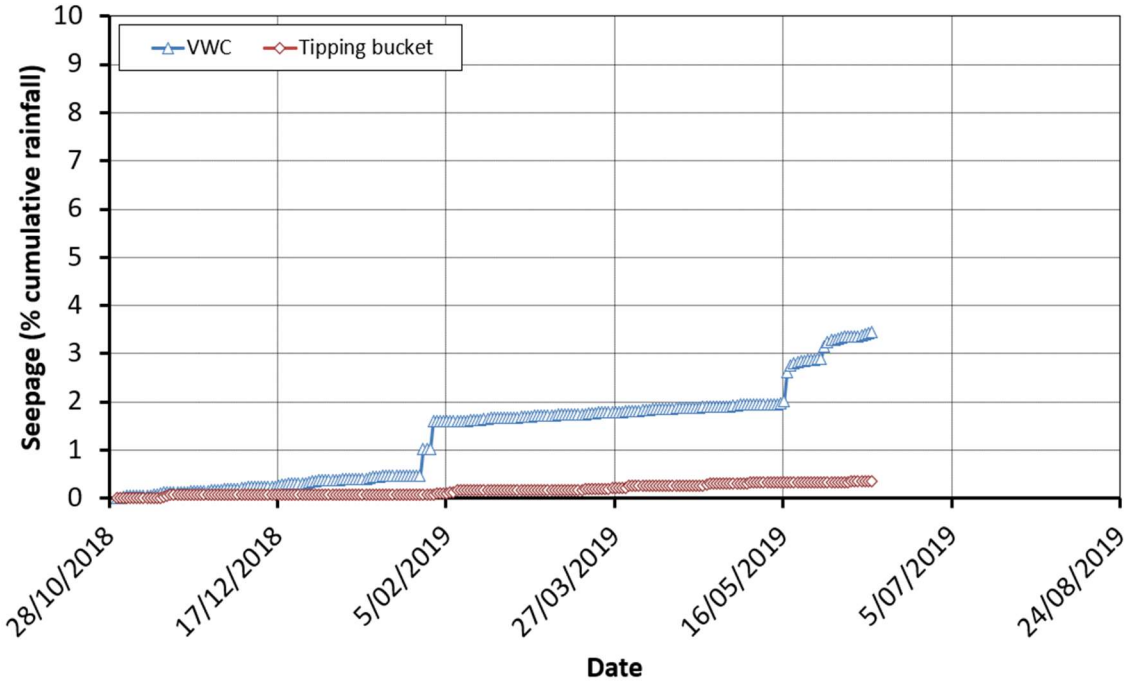


Figure 5 Seepage from the trial

3.2.3 Water balance

Incorporating stored infiltration results, artificial rainfall and seepage allows for the calculation of a water balance for the trial by solving for evaporation using EQ1:

Evaporation = Artificial rainfall – seepage – stored infiltration EQ 1

Table 2 summarises the water balance for the trial.

Table 2 Maximum water balance for the trial

Cover thickness	**Flux**		**Flux**
Units		**mm**	**(% of cumulative artificial rainfall)**
0.8 m	Store infiltration	20.32	4.92
	Seepage	1.47	0.36
	Evaporation	391.21	94.72

4.0 Semi-calibrated SVFlux modelling

The following section describes the trial model that was built using SVFlux (the model). It is important to note that the model was only semi-calibrated, and it is recommended that the Mine undertake a field trial prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

4.1 Method

The model was developed in one dimension and calculates the upward and downward movement of rainfall infiltration / seepage in the trial; it assumes no surface runoff or run on and allows ponding at the surface of the cover.

Transpiration from vegetation has been conservatively excluded since data is not available for this parameter ie the model only considers evaporation.

4.1.1 Model dimensions

The model was developed to replicate the trial, that is a 0.8 m thick layer of soil (Figure 6).

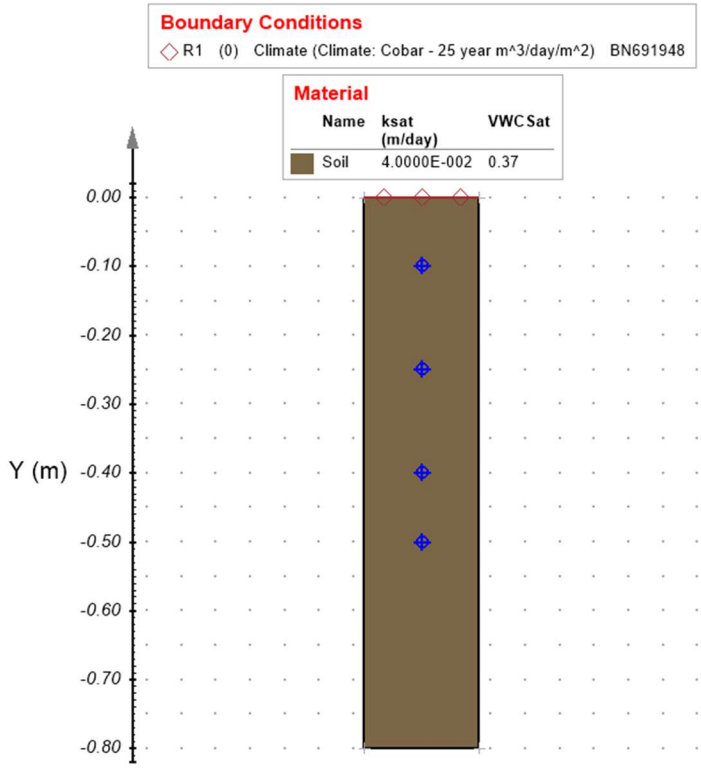


Figure 6 Model dimensions

4.1.2 Mesh geometry

The model automatic mesh generation and automatic mesh refinement algorithms were used to generate the finite element mesh in the model.

4.1.3 Initial conditions

4.1.3.1 Evaporation

Potential evaporation in the model was kept as a constant at 95% of rainfall which is what was observed in the trial.

4.1.3.2 Physical characteristics

a Soil water characteristic curves

The model requires soil water characteristic curves (SWCC). A SWCC is the relationship between VWC and matric suction for each depth where the sensors are placed in the cover. The matric suction sensors ceased functioning on 1 April 2019. Complete SWCCs for the trial could therefore not be created. An average of the SWCCs from the original cover column trials was used for the model.

The SWCC for the soil was fitted using the Fredlund & Xing (1994) method (Figure 7).

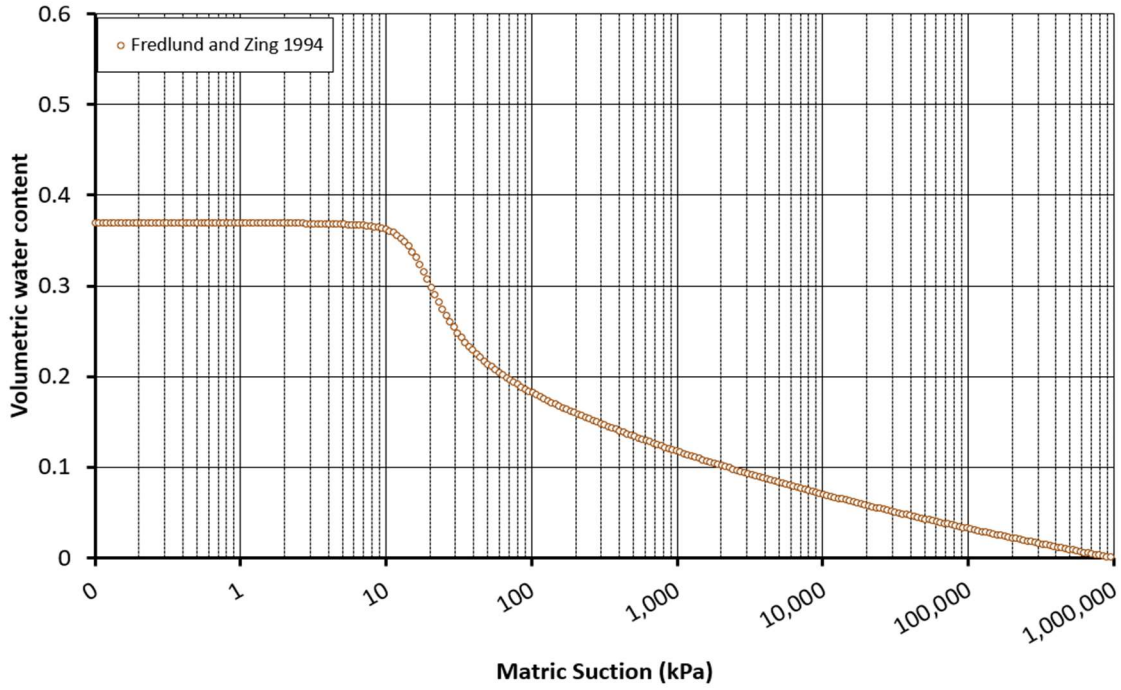


Figure 7 Fitted soil SWCC

b Saturated hydraulic conductivity

The saturated hydraulic conductivity of the soil was estimated from the trial by measuring the number of days for the base of the soil to measure a wetting response:

- Soil — 0.04 m/day or 4.62 x 10^{-7} metres per second (m/s);

c Unsaturated hydraulic conductivity

Hydraulic conductivity is the ability of the soil to transmit rainfall infiltration through the internal pore space and is defined by the rainfall infiltration velocity. The model derives unsaturated hydraulic conductivity curves from the SWCCs and the saturated hydraulic conductivity.

4.1.4 Analysis method

Rainfall data spanning 131 years from 1889 to 2019 was obtained from the Bureau of Meteorology SILO data drill (https://www.longpaddock.qld.gov.au/silo/).

The model was initially run for 25-years. The model was then run for a seven-month period ie the monitoring period using the artificial and natural rainfall data described in 3.1.2.3.

Finally, the model was run for a dry, average and wet year described in further detail in Section 4.1.4.2.

4.1.4.1 Steady state conditions

The primary model run (25 years) allowed the initial head condition within the model to reach a steady-state.

4.1.4.2 Transient analysis

A series of transient analyses were completed using the steady state conditions as the initial conditions.

Transient analysis was completed for:

- the seven months described in Section 3.1.2.3;
- the average year;
- the wet year; and
- the dry year.

The annual sequence of daily rainfall corresponding to the average wettest and driest years was selected from the ranked annual rainfalls (from wettest to driest):

- 1920 was chosen for the average year;
- 1950 was chosen for the wet year; and
- 1982 was chosen for the dry year.

The daily mean values for maximum and minimum temperature, maximum and minimum humidity and wind speed were obtained from the SILO data drill and were used for the scenarios.

The annual rainfall for the scenarios is presented in Table 3.

Table 3 Annual rainfall for model scenarios

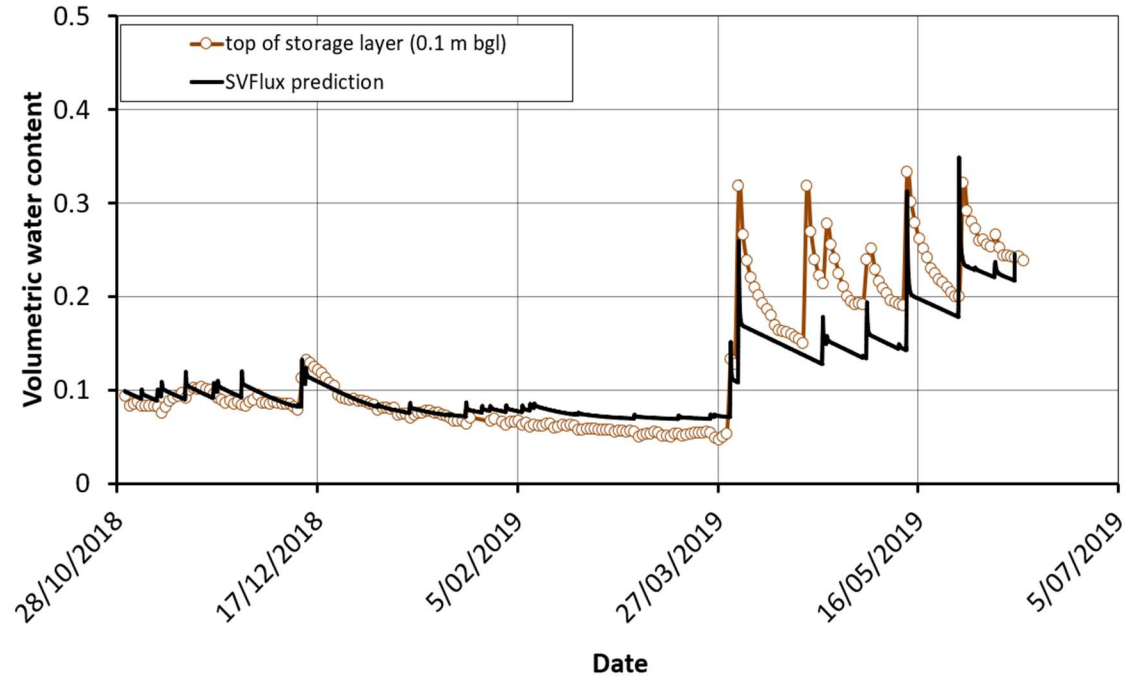
Scenarios	Year	Annual rainfall (mm)
Seven-month period	-	413
Average	1920	358.2
Wet	1950	807.8
Dry	1982	101.6

4.2 Results

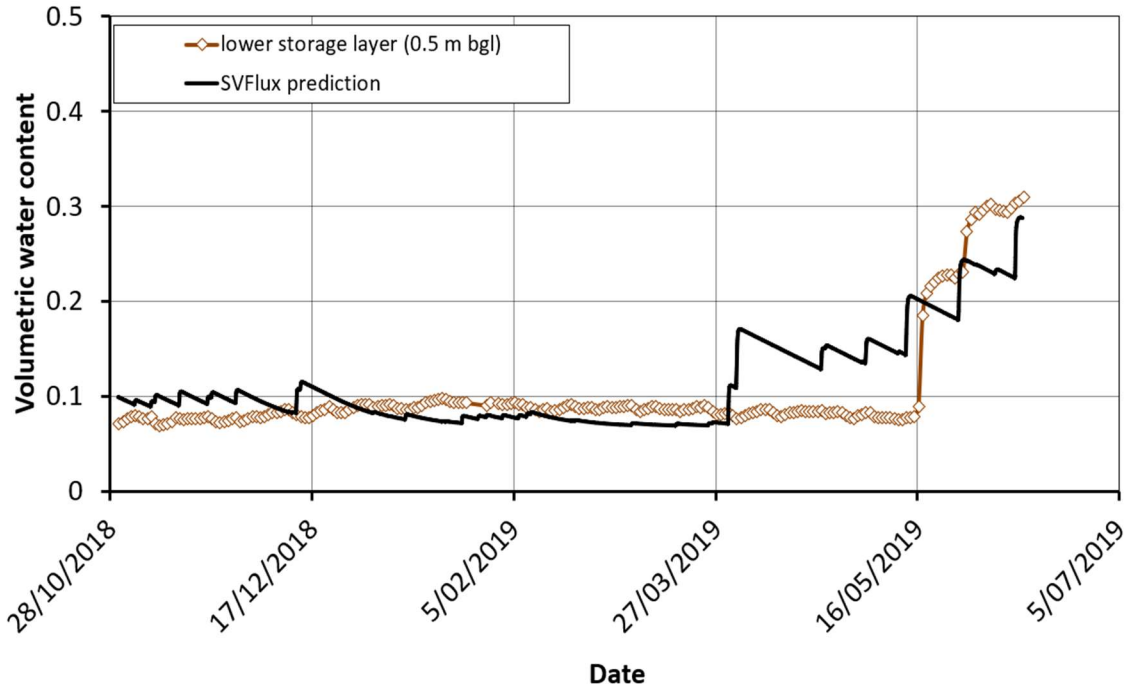
Figure 8 shows the results of the model VWC prediction compared to the in-situ results for the trial. It is noticeable that the model prediction closely matches the magnitude of response measured in the trial. One notable exception is in the lower soil layer, the model detects a rise in VWC a couple of months earlier than the in-situ results. This is likely a result of macropore flow in the soil resulting in infiltration moving around the VWC sensor, whereas the model, allows a relatively uniform flow of infiltration through the layer. By the end of the seven months, the lower part of the soil layer is near-saturation in both the model and the in-situ results.

In Figure 8:

- Figure 8a is the top of the soil layer (0.1 m bgl); and
- Figure 8b is lower in the soil layer (bottom working sensor, 0.5 m bgl).



(a)



(b)

Figure 8 Model results compared to cover column trials

The model has validated the initial conditions described in Section 4.1.3 and provides actual evaporation results using the Modified Wilson Empirical Equation (Wilson et al. 1997) which are presented in Section 4.2.1.

4.2.1 Water balance

A comparison of the artificial rainfall water balance from the trial to the model is presented in Table 4. The comparison shows that whilst the semi-calibrated model shows a very good correlation between the predicted and observed stored infiltration, seepage and evaporation. Modelled seepage was within ~0.36% of that observed in the trial.

Table 4 Water balance summary for artificial rainfall

	0.8 m cover	
	Column	**Model**
Total rainfall (mm)	413	413
Stored infiltration (%)	4.92	3.49
Seepage (%)	0.36	0.001
Evaporation (%)	94.72	96.51

The model accuracy would likely improve if the cover was represented by further segregation of the SWCC presented in Figure 7. Further, the model cannot account for macro-pore infiltration flow in response to short duration, high intensity rainfall which may result in bypass flow through the trial.

4.2.2 Future cover performance

The performance of the 0.8 m cover was assessed for an average, wet and dry year (Table 3) and is presented in Table 5. The maximum seepage which includes an error of 0.35% (observed in Section 4.2.1) is given in brackets. The maximum desirable seepage rate is 10% of rainfall (equivalent to 8.6×10^{-8} m/s); being the approximate natural rate of groundwater recharge in semi-arid Australian climates (Cook et al. 2004).

Table 5 Summary of 0.8 m cover water balance for average, wet and dry years

	Dry year	**Average year**	**Wet year**
Rainfall (mm)	101.6	358.2	807.8
Stored infiltration (%)	13.8	6.39	2.52
Seepage (%)	~0 (0.36)	~0 (0.36)	0.001 (0.361)
Actual evaporation (%)	86.2	93.6	97.48

Table 5 shows that the 0.8 m cover would likely limit seepage to well below 1% of cumulative rainfall and is well below the maximum desirable seepage rate.

4.2.3 Sensitivity analysis

As part of a sensitivity analysis, a 1 m cover was also assessed. The results are presented in Table 6.

Table 6 Summary of 1 m cover water balance for average, wet and dry years

	Dry year	**Average year**	**Wet year**
Rainfall (mm)	101.6	358.2	807.8
Stored infiltration (%)	17.22	7.06	2.95
Seepage (%)	~0 (0.36)	~0 (0.36)	0.001 (0.361)
Actual evaporation (%)	82.78	92.94	97.05

A comparison of Table 5 and Table 6 shows that the performance of the 1 m cover performs similarly to the 0.8 m cover and is unlikely to provide any additional benefits. Therefore, increasing the cover thickness beyond 0.8 m is not warranted.

5.0 Comparison to past cover trials

The modelled future performance of the original covers is shown in Table 7 to Table 9 (Appendix A).

Table 7 Summary of 0.6 m cover water balance for average, wet and dry years

	Dry year	Average year	Wet year
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	7.84	7.7	7.56
Seepage (%)	0.16	0.3	0.44
Actual evaporation (%)	92	92	92

Table 8 Summary of 0.4 m cover water balance for average, wet and dry years

	Dry year	Average year	Wet year
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	5.24	3.64	2.15
Seepage (%)	2.76	4.36	5.85
Actual evaporation (%)	92	92	92

Table 9 Summary of 0.2 m cover water balance for average, wet and dry years

	Dry year	Average year	Wet year
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	1.2	0.3	2.7
Seepage (%)	6	7.7	17.3
Actual evaporation (%)	92.8	92	80

Table 7 to Table 9 shows that the 0.2 m cover is unlikely to limit seepage to less than the desired seepage rate. Performance also improves significantly from the 0.4 m cover to the 0.6 m cover. The 0.4 m cover is likely to allow ~6% seepage while the 0.6 m cover is likely to restrict seepage to less than 1%. A comparison of Table 5 and Table 7 shows that increasing the cover thickness from 0.6 m to 0.8 m is likely to restrict seepage to near 0% (noting that this comparison excludes error range). The sensitivity analysis (Section 1.1.1) shows that cover performance is unlikely to improve beyond 0.8 m. A past review (Appendix A), demonstrated that a cover thicker than 1 m may result in reduced cover performance as infiltration cannot be effectively removed by evapotranspiration. Therefore, based on all the cover trials completed and subsequent modelling, the optimum cover thickness is between 0.6-0.8 m.

5.1 Recommended cover

At this stage, the recommended cover thickness is 0.6 m. However, should additional soil be available, the cover could be increased to 0.8 m thick to further improve performance. A material balance will be required to determine this with certainty (see recommendations, Section 6.1).

6.0 Conclusions and recommendations

This study has shown through a cover column trial and a semi-calibrated model that a 0.8 m cover over the TSF at the Mine will significantly reduce the potential for rainfall infiltration into the PAF tailings. A reduction of rainfall infiltration will limit the potential for environmental harm through AMD.

The trial was commissioned in October 2018 and was subjected to ~413 mm of artificial and natural rainfall over a seven-month period to develop a maximum water balance. The water balance of the trial was measured by calibrated matric suction and VWC sensors. Seepage from the base of the cover column trials was measured by rain gauge tipping buckets and the bottom VWC sensor. The trial showed that seepage was limited to 0.36% (tipping buckets).

Following the trial, the maximum water balance was used to develop a semi-calibrated model in SVFlux. The model used the average SWCC from the original cover column trials due to the malfunctioning of the matric suction sensors. Saturated hydraulic conductivities and potential evaporation rates were derived from the trial itself. The semi-calibrated model showed a good correlation to the observed results and it was accepted that the semi-calibrated model could be used to predict the long-term performance of the cover.

The trial's performance was simulated for a wet, average and dry year to predict the likely long-term performance had the 0.8 m cover been built on the TSF. Seepage was predicted to be well under 1% in the long term.

Finally, a comparison of the trial and the original cover column trials showed that a large improvement in performance from 0.4 m to 0.6 m thickness is likely. Increasing the cover thickness from 0.6 m to 0.8 m is likely to improve seepage from less than 1% to near 0%. The sensitivity analysis showed that cover performance is unlikely to improve beyond 0.8 m, and may start to decline at cover thicknesses equal to or greater than 1 m. The optimum cover thickness is therefore between 0.6-0.8 m. At this stage, the recommended cover thickness is 0.6 m. However, should additional soil be available, the cover thickness could be increased to 0.8 m.

6.1 Recommendations

Five recommendations are made from this study:

6. Two cover column trials (0.6 m and 0.8 m), should be decommissioned and recommissioned in large steel columns. This will allow the covers to be trialled long-term without the risk of shrinking and swelling of the fill (as was observed in the 0.8 m trial). It will also increase the likelihood that the data collected is accurate before the preferred cover is progressed to a large field trial on the TSF.
7. During the decommissioning, the covers should be assessed to determine whether capillary rise of salts and metals into the covers has occurred. Capillary rise could limit the establishment and growth of vegetation and ultimately, impact cover performance. Testing for capillary rise would involve sampling of the cover and analysis for acidity, salts and metals.
8. Artificial watering should cease, and all three cover column trials seeded to establish vegetation. This will allow the water balance to be further refined, including the prediction of long-term performance by adjusting the water balance for evapotranspiration.
9. A material balance should be conducted to determine if there is enough soil available to construct the recommended covers.
10. Large field trials should be established and monitored prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

References

EMM Consulting Pty Limited, (EMM) (2016). *Review of Cover Thickness for the Tailings Storage Facility*. Report prepared for Hera Resources Pty Limited.

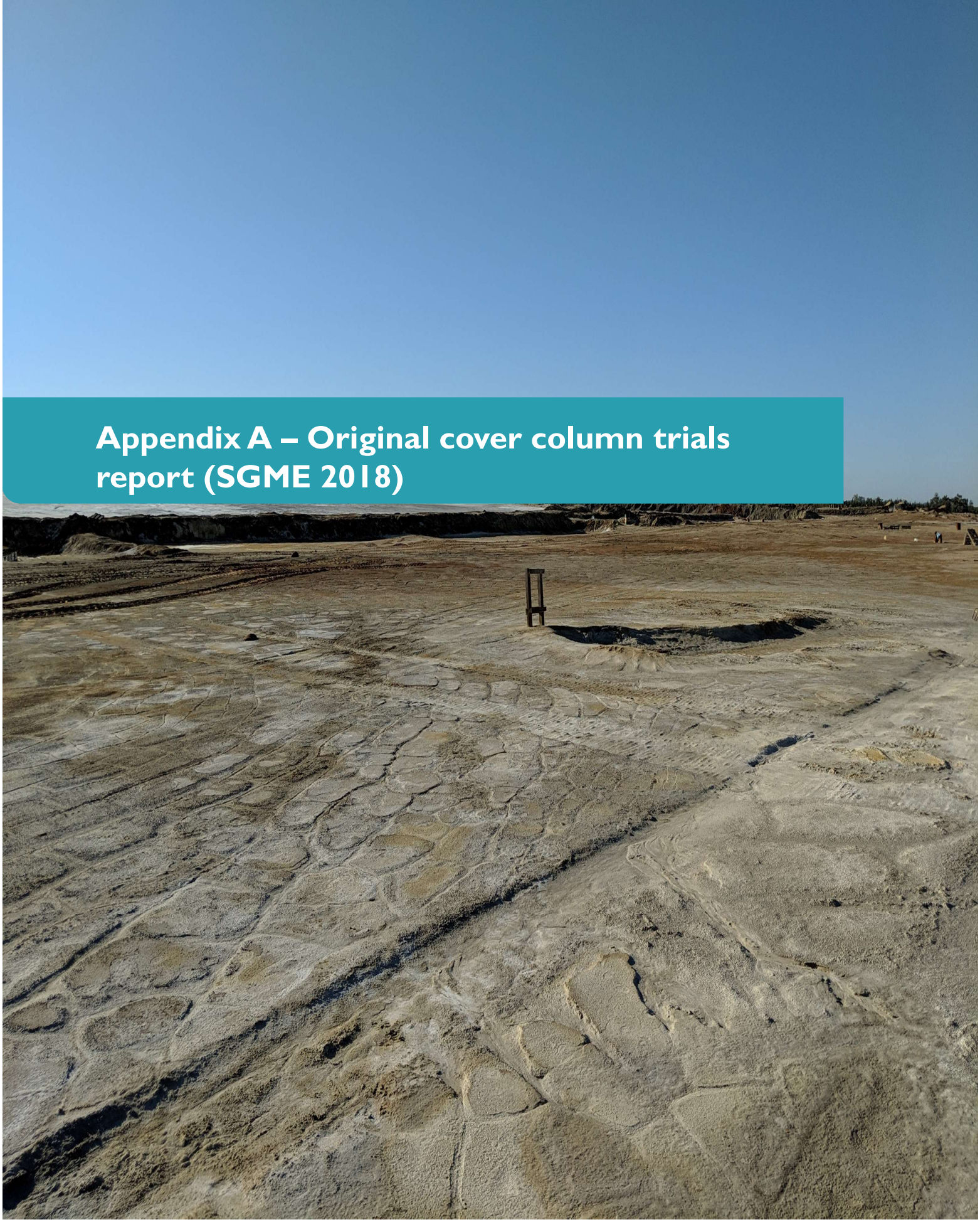
Geoslope, (2012). *Vadose Zone Modelling with VADOSE/W*, viewed at http://www.geo-slope.com/products/vadosew.aspx.

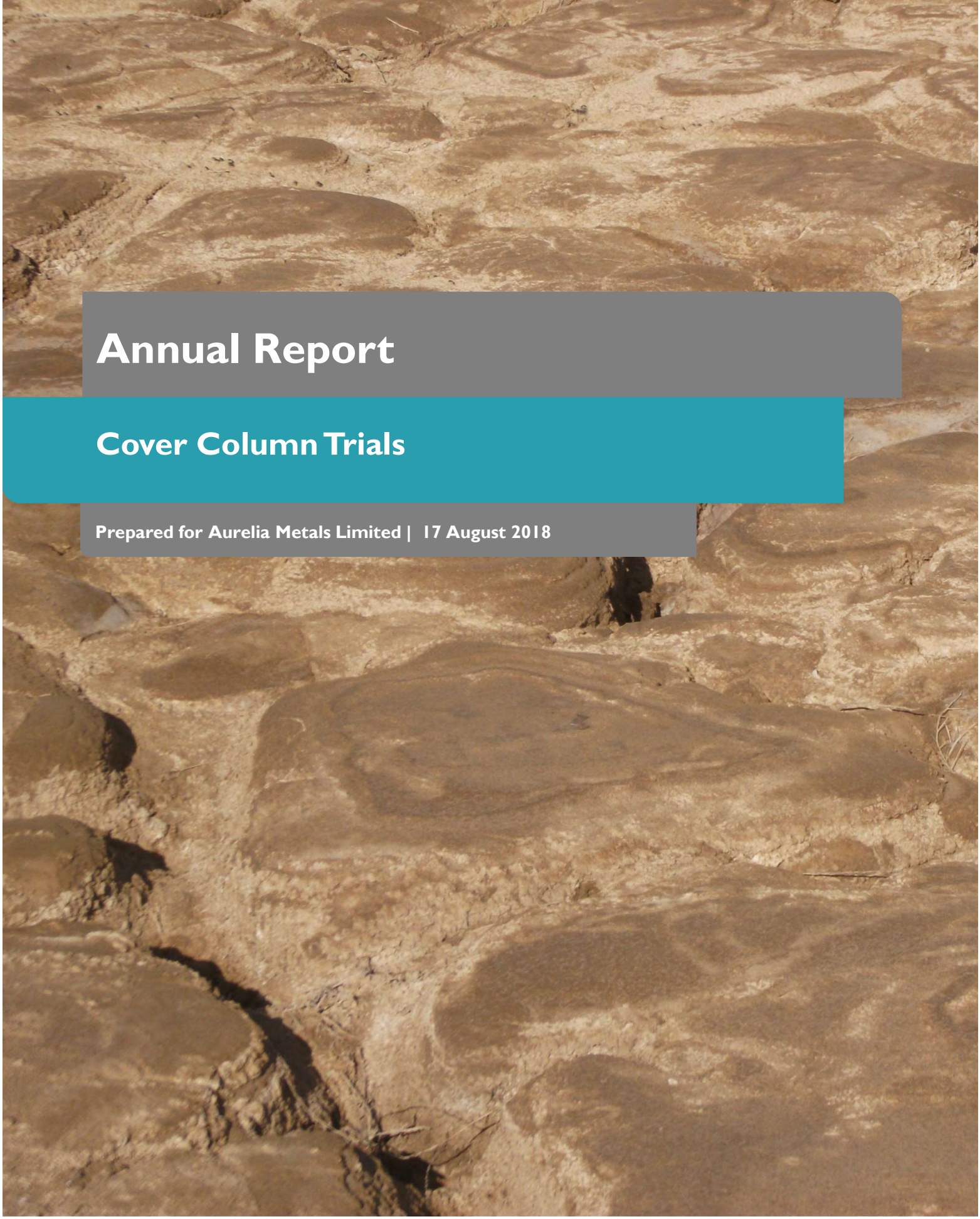
SGM Environmental (SGME) 2018a, *Tailings Storage Facility Geochemistry Sampling Program*, Brisbane, Australia.

SGM Environmental (SGME) 2018b, *Annual Report – Cover Column Trials*, Brisbane, Australia.

Wilson GW, Fredlund DG & Barbour SL (1997). *The effect of soil suction on evaporative fluxes from soil surfaces.* Canadian Geotechnical Journal, Vol. 34, No. 4, pp. 145-155.

Appendix A – Original cover column trials report (SGME 2018)





Annual Report

Cover Column Trials

Prepared for Aurelia Metals Limited | 17 August 2018

aurelia METALS Ltd.

SGMenvironmental

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Annual Report

Cover Column Trials

Hera Mine

Prepared for Aurelia Metals Limited | 17 August 2018

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Table of Contents

1.0 Introduction 8
1.1 Location and history of operation 8
1.2 Mine description 8
1.3 Rehabilitation of the TSF 8
1.4 Scope and report structure 10
2.0 The cover column trials 11
2.1 Method 11
2.1.1 Sensor calibration 11
2.1.2 The cover column trials 12
2.2 Results and discussion 15
2.2.1 Sensor calibrations 15
2.2.2 VWC and matric suction 15
2.2.3 Wetting and drying 16
2.2.4 Stored infiltration 16
2.2.5 Seepage 18
2.2.6 Water balance 18
3.0 SVFlux modelling 20
3.1 Method 20
3.1.1 Model dimensions 20
3.1.2 Mesh geometry 21
3.1.3 Initial conditions 21
3.1.4 Analysis method 23
3.2 Results and discussion 23
3.2.1 Water balance 25
3.2.2 Future cover performance 25
3.2.3 Performance of the 0.6 m cover to industry examples 26
4.0 Conclusion and recommendations 30
4.1 Recommendations 30
References 31

Table of Contents

Appendix

A	Matric suction sensor calibration method	32
B	Matric suction sensor calibrations	35
C	VWC and matric suction sensor results	39

Photograph

1	Cover column trials	12
2	Building the filter layer	13
3	Ponding of water on the cover column trials	15
4	Matric suction sensor calibration	34

Figure

1	Location	9
2	Calibration set-up	11
3	Burial depth of sensors	14
4	Artificial rainfall applied to cover column trials	16
5	Stored infiltration in the cover column trials	17
6	Seepage from the cover column trials	19
7	Model dimensions	20
8	In-situ SWCCs	22
9	Model results compared to cover column trials	24
10	Performance of Australian cover trials	27
11	PGM cover trials: (a) cumulative rainfall (b) degree of saturation for 1.5 m cover trial (c) 2 m cover trial (after Schneider, 2012)	28
12	Generalised SWCC illustrating which part of the SWCC are measured by the calibration method	34
13	0.6 m cover matric suction sensor calibration curves	36
14	0.4 m cover matric suction sensor calibration curves	37
15	0.2 m cover matric suction sensor calibration curves	38

Table of Contents

16	Cover column trial matric suction results	41
17	Cover column trials VWC results	42

Table

1	Maximum water balance for each cover thickness	18
2	Annual rainfall and evaporation for model scenarios	23
3	Water balance summary for artificial rainfall	25
4	Summary of 0.6 m cover water balance for average, wet and dry years	25
5	Summary of 0.4 m cover water balance for average, wet and dry years	25
6	Summary of 0.2 m cover water balance for average, wet and dry years	26

Important note about your report

The sole purpose of this report and the associated services performed by SGM environmental Pty Limited (SGME) is to prepare an annual report describing the results from three cover column trials at Hera Mine (the scope of work) in accordance with the scope of services set out in the contract between SGME and Aurelia Metals Limited. That scope of services, as described in this report, was developed with the Client.

In preparing this report, SGME has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by Aurelia Metals Limited and/or from other sources. Except as otherwise stated in the report, SGME has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

SGME derived the data in this report from information sourced from Aurelia Metals Limited, designated laboratories and/or information that has been made available in the public domain at the time or times outlined in this report. Additionally, this report has been prepared based on instruments which EMM Consulting Pty Limited (EMM) installed in the cover column trials (the field data). The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the field data and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report.

SGME has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by SGME for use of any part of this report in any other context.

Reporting of the results from three cover column trials at Hera Mine are based on a desktop assessment of data that has been measured by Aurelia Metals Limited and other third parties.

This report has been prepared on behalf of, and for the exclusive use of, Aurelia Metals Limited, and is subject to, and issued in accordance with, the provisions of the contract between SGME and Aurelia Metals Limited.

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Executive summary

This study has shown through cover column trials and a semi-calibrated model that a 0.6 metre (m) cover over the TSF will significantly reduce the potential for rainfall infiltration into the potentially contaminating tailings. A reduction of rainfall infiltration will limit the potential for environmental harm through ARD.

The cover column trials were commissioned in December 2017 and were subjected to ~ a years' worth of rainfall over a four month period to develop a maximum water balance. The cover column trials showed that as the cover thickness decreased the seepage rate increased and that the optimum cover thickness is 0.6 m cover.

Following the column trials, a semi-calibrated model was developed in SVFlux using the outputs from the cover column trials. That is, soil water characteristic curves (SWCCs), saturated hydraulic conductivities and potential evaporation rates. The semi-calibrated model showed a good correlation to the observed results and it was accepted that the semi-calibrated model could be used to predict the long-term performance of the covers.

Finally, the cover column trials performance was simulated for a wet, average and dry year. The long-term prediction showed that the 0.6 m cover provided the best balance between rainfall infiltration storage and seepage. Seepage was predicted to be under 1% in the long-term. The performance of the thinner covers was less successful with the 0.4 m cover likely to allow ~ 6% seepage and the 0.2 m cover likely to allow 17% seepage.

By comparison to Australian examples of covers that have been built on mine sites, the 0.6 m cover is expected to perform comparatively. Further, regional experience (at PGM and CSA Mine) indicates that a thick cover may result in reduced cover performance. The review suggests that the optimum cover thickness for the region is likely between 0.4-1 m.

The findings of this study, that a 0.6 m cover is the best performing cover, based on cover column trials and modelling is supported by regional and Australian experience.

Three recommendations are made from this study:

1. The cover column trials should be moved to an uncovered position so that they are exposed to naturally occurring rainfall and evaporation. Further vegetation should be established on the trials. This will allow the water balance to be further refined, including the prediction of long-term performance.
2. The potential harmful effects of capillary rise of salts and metals into the cover, which could limit vegetation establishment should be assessed. This could include periodic sampling of the column cover trials once recommendation one is implemented.
3. Large field trials should be established and monitored prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

1.0 Introduction

1.1 Location and history of operation

The Hera Gold (Au)-Lead (Pb)-Zinc (Zn) Underground Mine (the Mine) is owned by Aurelia Metals Limited (formerly YTC Resources Limited) and operated by its 100% owned subsidiary, Hera Resources Pty Limited (the Company) and is 100 kilometres (km) south-east of Cobar, central New South Wales (NSW) (Figure 1).

The Hera deposit was first discovered by CBH Resources Limited in 2001 before being acquired by the Company in 2009. The NSW government approved the Mine development in 2012 and the Mine commenced first production in 2014 with commercial production achieved in 2015. In 2016, the Mine produced approximately (~) 46,000 ounces (oz) of Au and 25,000 tonnes (t) of Pb-Zn concentrate from the processing of 308,000 t of ore.

1.2 Mine description

The Mine is accessed through an initial box cut, portal and decline, the waste rock from which is temporarily stored in the waste rock emplacement area (WRE) adjacent to the mine industrial area. The current operational plan is to return all waste rock to either the underground workings or to use it for further lifts of the tailings storage facility (TSF).

The Mine is operated by longhole, open-stoping with waste rock reinjected as rock pillars to divide the underground workings into discreet stoping areas. The ore is crushed by a three-stage crushing circuit before processing by gravity, flotation and leach circuits to produce Au-silver (Ag) dore. The processed ore (ie most metalliferous minerals have been removed) is pumped as thickened tailings slurry (the tailings) to a ~ 46 hectare (ha) TSF where the tailings are deposited from a series of raised spigots. Once deposited the tailings form a graded beach sloping to the east.

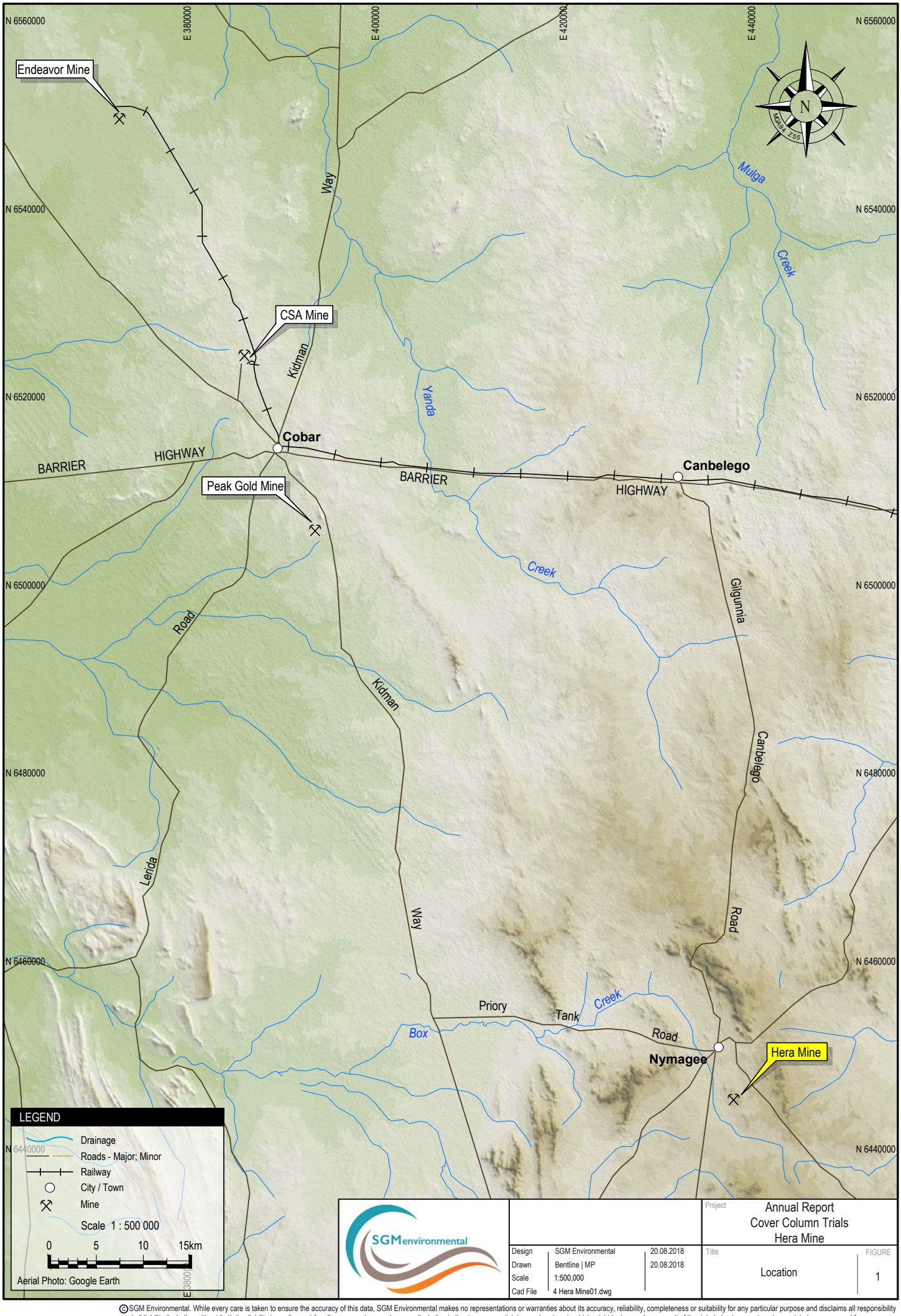
The tailings contain sulfide and are classified as potentially acid forming — low capacity (PAF-LC) despite the acid neutralising capacity (ANC) being greater than the maximum potential acidity (MPA). This is due to the ANC:MPA ratio being less than 1.25 resulting in a low factor of safety of the tailings remaining non-acid forming (NAF). Tailings are enriched with arsenic (As), lead (Pb), antimony (Sb) and tin (Sn) which may result in acidified metal laden seepage entering the receiving environment as acid rock drainage (ARD) if not managed properly.

1.3 Rehabilitation of the TSF

At closure the TSF will be rehabilitated by first allowing the tailings to desiccate and settle, followed by profiling the elevated landform so that the beach slope angle does not exceed 1(V):3(H) or 18°. Once the tailings beach final surface has been constructed a cover will be built on the tailings. The cover has been described in the *Hera Mine Environmental Assessment* (R.W Corkery 2011) as an impermeable compacted layer of clay and waste rock which will be free draining and shed water from the rehabilitated landform.

The *Mine Operation Plan* (the MOP) (R. W Corkery 2013) describes the cover as being 0.5 metres (m) thick.

A review of the R. W Corkery (2011 & 2013) cover concepts was completed by EMM Consulting Pty Limited (EMM) in 2016 (EMM 2016). The EMM report (EMM 2016) concluded that a cover thickness of between 0.4-1.0 m was most appropriate based on regional experience and preliminary modelling using Vadose/w (Geoslope 2012). The EMM report (EMM 2016) recommended that the Mine set up column trials to develop an early understanding of how the potential cover options (ie cover thicknesses between 0.4-1.0 m) will perform (the cover column trials).



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1.4 Scope and report structure

The scope of this report is to present the results from cover column trials which were set-up as an outcome from the EMM report.

This study included constructing three cover column trials:

- a 0.2 m cover — this thin soil cover was included to demonstrate that a cover thinner than 0.4 m was unlikely to be successful;
- a 0.4 m cover — this was the thinnest soil cover option proposed by EMM (2016); and
- a 0.6 m cover — this was close to the optimum soil cover thickness proposed by EMM (2016).

Once constructed the cover column trials were artificially wet-up by manually applying water to the surface of each cover column trial to develop a maximum water balance. This is described in Section 2.0.

The storage and loss of the artificial rainfall from each cover column trial was monitored and has been used to develop a semi-calibrated model for the cover column trials to predict how they would perform if constructed on the TSF. The model provides a preliminary prediction of long-term performance and this is described in Section 3.0.

Finally, the report presents conclusions and recommendations in Section 4.0.

2.0 The cover column trials

The cover column trials were completed in three stages:

- sensor calibration;
- constructing the columns including inserting the calibrated sensors; and
- applying artificial rainfall to develop a maximum water balance for the cover ie the maximum amount of seepage if the covers become near-saturated.

2.1 Method

2.1.1 Sensor calibration

The cover column trials were instrumented with volumetric water content (VWC) and matric suction sensors. The following sections describe how the sensors were calibrated prior to installation in the cover column trials.

2.1.1.1 Matric suction sensors

a Theory

The matric suction sensors consist of a heating and reference wire surrounded by sintered ceramic (the components). The sintered ceramic is porous and when buried in the cover column trial will wet and dry in response to wetting and drying of the cover column trial. The matric suction sensor infers how wet or dry the sintered ceramic, and hence the cover is, daily by measuring the temperature of the reference wire at one second followed by 30 seconds of heating of the heater wire followed by a final measure of the reference wire at 30 seconds. How hot the reference wire becomes is a function of the cover. That is, how wet or dry the sintered ceramic is. For example, if the sintered ceramic is wet then it will heat more slowly, and hence to a lesser extent, compared to if the sintered ceramic was dry.

Matric suction sensors require calibration so that an empirical relationship between change in temperature (ΔT) and matric suction can be developed for each sensor prior to installation in the cover column trials.

b Calibration set-up

The matric suction sensors were calibrated in either soil or tailings, correlating to their depth of burial within the cover column trials. The calibration set up is shown in Figure 2.

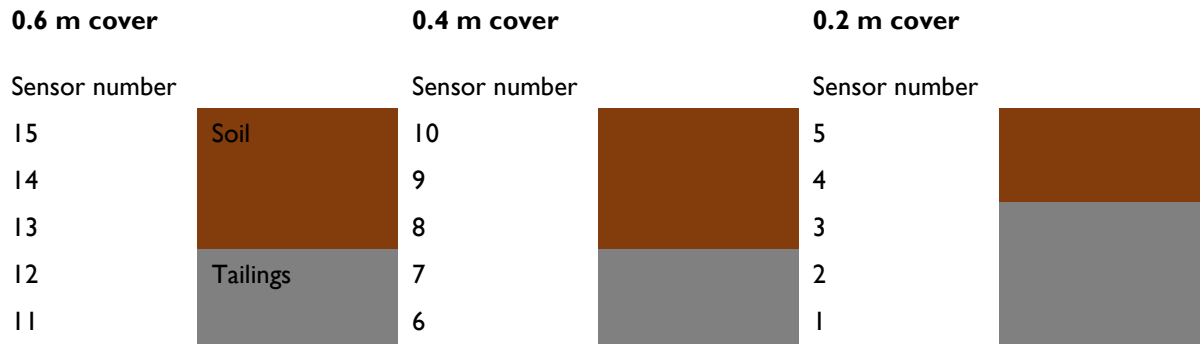


Figure 2 Calibration set-up

Matric suction sensors were individually calibrated by comparing the measured ΔT of the matric suction sensor to the matric suction of the soil or tailings. The matric suction of the soil or tailings was determined by measuring

total suction with a dew-point water potential meter and calculating osmotic suction from electrical conductivity (EC). Matric suction was then calculated by subtracting osmotic suction from total suction.

The method used for calibration of the matric suction sensors is presented in Appendix A.

The derived calibrations apply to:

- dewatering of sensors, and do not account for hysteresis; and
- constant temperature and humidity conditions, as applied during the calibration process.

2.1.1.2 VWC sensors

VWC is measured using time domain reflectometer (TDR). TDR sensors determine the VWC independent of soil or tailings texture, temperature and salt content.

They do not require calibration so-long as the EC remains below 10,000 microsiemens per centimeter (µS/cm) (Campbell Scientific 2000).

The sensors were not calibrated prior to installation.

2.1.2 The cover column trials

The following sections describes the construction and operation of the cover column trials so that a maximum water balance could be calculated as an outcome of the experiment.

2.1.2.1 Construction

The cover column trials are constructed in intermediate bulk containers (IBCs) placed on stacked pallets which are graded so that seepage flows towards a drainage tap at the base of the cover column trials. A cover column trial is shown in Photograph 1. Each cover column trial is ~ 1 m tall and has a surface area of ~ 1.17 metre square (m^2).



Photograph 1 Cover column trials

The cover column trials include a drainage tap at the base of the column (Photograph 1). A rain gauge tipping bucket is connected to the tap using polyvinyl chloride (PVC) pipe at the toe of the column. The rain gauge tipping buckets measure the volume of seepage. The rain gauge tipping buckets sit on-top of a reservoir which allows seepage to be collected for chemical analysis.

2.1.2.2 Filling

The cover column trials are made up of layers of soil and tailings which are described in the following sections.

A 0.1 m filter layer of clean gravel was placed on the bottom of each column to act as a drainage layer (Photograph 1a). Geofabric was placed on top of the filter layer to prevent tailings from clogging it by migrating into the gravel pore spaces (Photograph 1b). Geofabric was also placed over the drainage tap opening to further assist in filtering potential migration of fines (Photograph 1c, d & e).



(a)



(b)



(c)



(d)



(e)

Photograph 2 Building the filter layer

a 0.2 m cover

The 0.2 m cover column trial includes:

- a 0.6 m layer of fresh tailings above the filter layer compacted to a bulk density of 1.8 tonnes per cubic metre (t/m^3). The target density was achieved by compacting 57, 21 kilogram (kg) buckets of air dry tailings into 0.64 cubic metres (m^3).
- a 0.2 m layer of soil above the tailings layer at a bulk density of 1.6 t/m^3. The target density was achieved by tipping 15, 21.5 kg buckets of air dry soil into 0.2 m^3.

b 0.4 m cover

The 0.4 m cover column trial includes:

- a 0.55 m layer of fresh tailings above the filter layer compacted to a bulk density of 1.8 t/m^3. The target density was achieved by compacting 38, 20 kg buckets of air dry tailings into 0.42 m^3.
- a 0.4 m layer of soil above the tailings layer at a dry density of 1.4 t/m^3. The target density was achieved by tipping 33, 21.5 kg buckets of air dry soil into 0.5 m^3.

c 0.6 m cover

The 0.6 m cover column trial includes:

- a 0.2 m layer of fresh tailings above the filter layer compacted to a bulk density of 1.7 t/m^3. The target density was achieved by compacting 21, 19 kg buckets of air dry tailings into 0.23 m^3.
- a 0.6 m layer of soil above the tailings layer at a bulk density of 1.5 t/m^3. The target density was achieved by tipping 48, 21.5 kg buckets of air dry soil into 0.58 m^3.

2.1.2.3 Installation of instruments

The cover column trials included buried sensors in the soil and tailings layers. The buried sensors measure VWC and matric suction. The cover column trials have five pairs of VWC and matric suction sensors buried at the depths shown in Figure 3.

0.6 m cover		**0.4 m cover**		**0.2 m cover**	
Sensor number	Burial depth	Sensor number	Burial depth	Sensor number	Burial depth
15	0.13 m	10	0.13 m	5	0.10 m
14	0.28 m	9	0.30 m	4	0.20 m
13	0.55 m	8	0.45 m	3	0.31 m
12	0.63 m	7	0.50 m	2	0.62 m
11	0.80 m	6	0.79 m	1	0.80 m

Figure 3 Burial depth of sensors

2.1.2.4 Wetting and drying

The cover column trials were subjected to eight artificial rainfall events over four months. The purpose of the artificial rainfall was to allow the cover column trials to wet up and dry out so that a maximum water balance could be calculated for each cover:

- 60 millimetres (mm) simulated rainfall on day 47;
- 60 mm simulated rainfall on day 69;
- 60 mm simulated rainfall on day 82;
- 60 mm simulated rainfall on day 88;
- 60 mm simulated rainfall on day 102;
- 60 mm simulated rainfall on day 117;
- 60 mm simulated rainfall on day 131; and
- 60 mm simulated rainfall on day 148 to the 0.6 m cover column trial only.

During wetting events artificial rainfall could pond on the surface of the cover column trials (Photograph 3).



Photograph 3 Ponding of water on the cover column trials

2.2 Results and discussion

2.2.1 Sensor calibrations

Calibration functions for each cover column trial are presented in Appendix B. Campbell Scientific matric suction sensors are recommended for use for matric suctions ranging from 10-1,000 kilopascals (kPa). These sensors are regularly calibrated for suctions greater than 1,000 kPa (Flint et al. 2002). The calibration functions presented extended up to 1,000,000 kPa, it is however unlikely that matric suctions of this order will ever be achieved in the field. The expected range for environmental conditions at the Mine are likely to extend from 10 kPa to approximately 100,000 kPa, corresponding to wet and dry seasons respectively.

2.2.2 VWC and matric suction

Cover column trial results for VWC and matric suction are described in Appendix C since they are not central to the development of the maximum water balance for each cover thickness option.

2.2.3 Wetting and drying

The cover column trials were subjected to 8 artificial rainfall events over ~ 4 months (Figure 4).

In total ~ 480 mm of artificial rainfall was added to the cover column trials, equivalent to approximately one year of annual rainfall of ~ 400 mm (Figure 4).

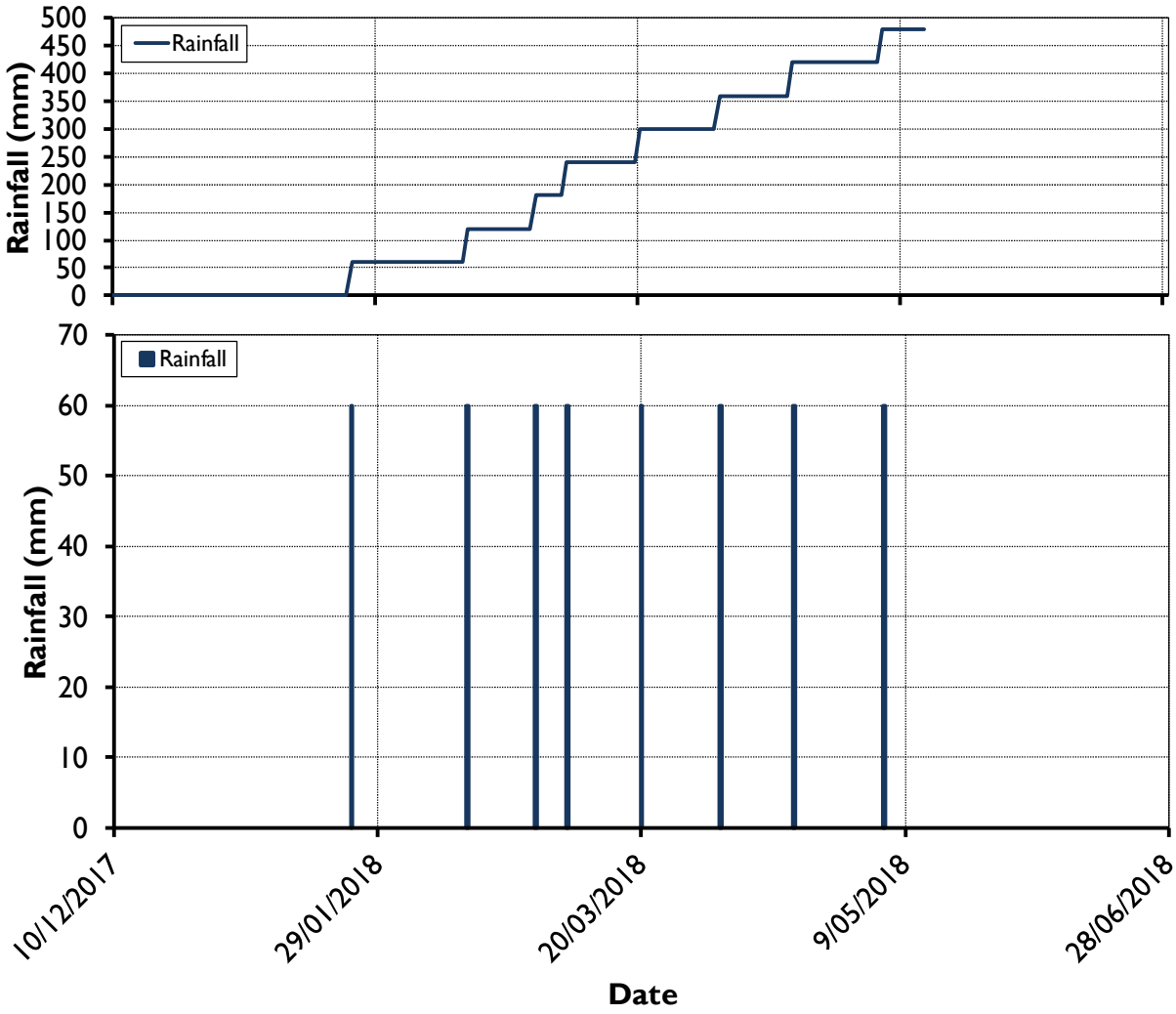


Figure 4 Artificial rainfall applied to cover column trials

2.2.4 Stored infiltration

Stored infiltration in the cover column trials can be calculated daily by multiplying the change in VWC by depth. The daily incremental change in stored infiltration (Δ SW) balances the infiltration budget daily as either wetting (+ve Δ SW) or drying (-ve Δ SW). As such, it is proportional to the rate of evaporation. Figure 5 presents the stored infiltration in the 0.6 m, 0.4 m and 0.2 m covers in Figure 5a-c respectively.

Of the three cover thicknesses the 0.6 m cover stores the most infiltration (~ 18 mm) followed by the 0.4 m cover (~ 10 mm) and the 0.2 m cover stores the least infiltration (~ 6 mm).

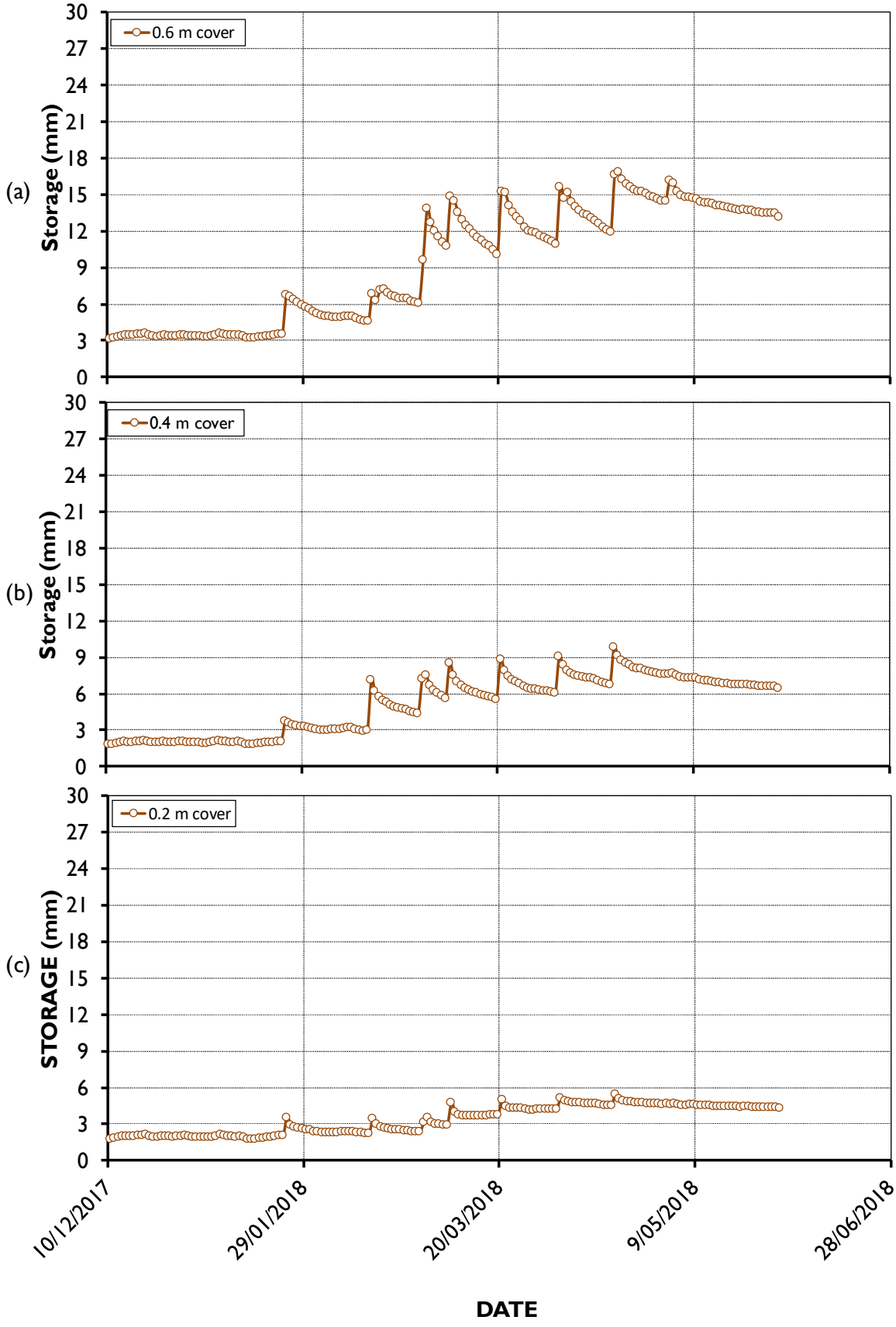


Figure 5 Stored infiltration in the cover column trials

2.2.5 Seepage

Seepage from the cover column trials can be calculated daily (Figure 6) by multiplying the change in VWC by depth for the sensor located in the base of the soil layer and the sensor located at the top of the tailings. When the daily incremental change in ΔSW is negative then it is assumed that seepage is occurring because water is moving from the soil layer (the cover) into the tailings and can no longer be removed by vegetation transpiration or evaporation.

The 0.6 m and 0.4 m covers performed similarly, restricting seepage to less than 1% of cumulative artificial rainfall (4.8 mm) (Figure 6a & b). As expected the 0.2 m cover performed least favourable with seepage equal to ~ 6% of cumulative artificial rainfall or 28.8 mm (Figure 6c).

2.2.6 Water balance

Incorporating stored infiltration results, artificial rainfall and seepage allows for the calculation of a water balance for cover column trial by solving for evaporation using EQ1:

Evaporation = Artificial rainfall – seepage – stored infiltration EQ 1

Table 1 summarises the water balance for the three cover thicknesses and shows that generally as the alternative cover thickness decreases the effect of evaporation decreases correlating to an increase in seepage.

Table 1 Maximum water balance for each cover thickness

Cover thickness	**Flux**		**Flux**
Units		**mm/m²**	**(% of cumulative artificial rainfall)**
0.6 m cover	Store infiltration	18	3.8
	Seepage	4.8	1.0
	Evaporation	457.2	95.3
0.4 m cover	Store infiltration	10	2.1
	Seepage	4.8	1.0
	Evaporation	465.2	96.9
0.2 m cover	Store infiltration	6	1.3
	Seepage	28.8	6.0
	Evaporation	445.2	92.8

Further the cover column trials have shown (Table 1):

- That infiltration storage increases with cover thickness and so too does evaporation. The result is that as the cover thickness increases, the potential for seepage decreases.
- Conversely if the cover thickness is too thin then there is insufficient infiltration storage capacity, resulting in near-saturated conditions developing more rapidly correlating to an increase in the seepage potential. The increased seepage is a result of the near-saturated vertical hydraulic conductivity exceeding the rate of evaporation.
- The preferred cover thickness is 0.6 m since it provides the best balance between infiltration storage and evaporation resulting in the lowest recorded seepage.

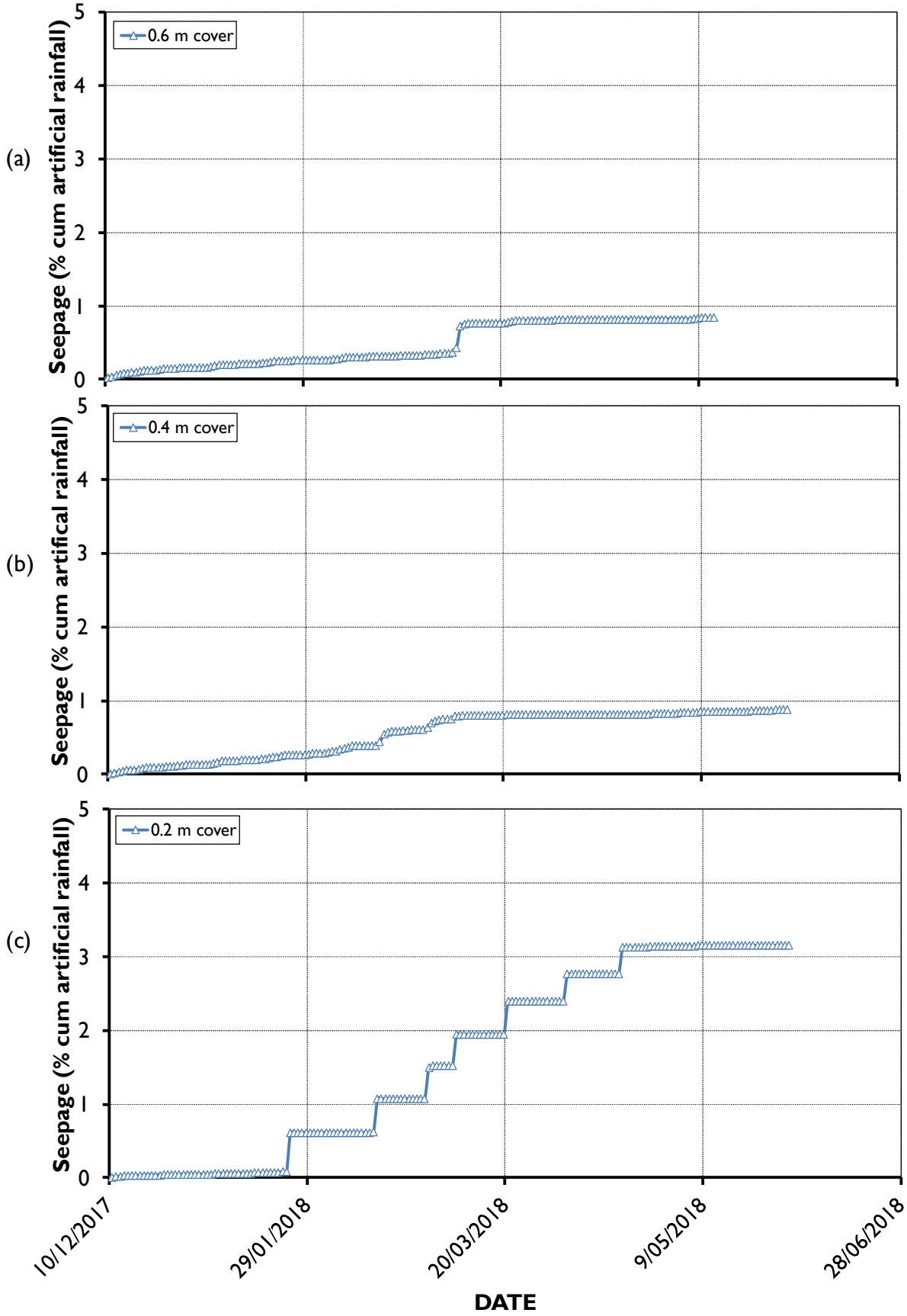


Figure 6 **Seepage from the cover column trials**

3.0 SVFlux modelling

The following section describes the cover column trial models that were built using SVFlux (the model). It is important to note that the model was only semi-calibrated, and it is recommended that the Mine undertake a field trial prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

3.1 Method

The model was developed in one dimension and calculates the upward and downward movement of rainfall infiltration/seepage in the cover column trials; it assumes no surface runoff or run on and allows ponding at the surface of the cover (Photograph 3).

Transpiration from vegetation has been conservatively excluded since data is not available for this parameter ie the model only considers evaporation.

3.1.1 Model dimensions

The models were developed to replicate the cover column trials, that is 1 m thick with varying thicknesses of tailings overlain by one of three soil thicknesses ie 0.2 m, 0.4 m and 0.6 m shown in Figure 7a-c respectively.

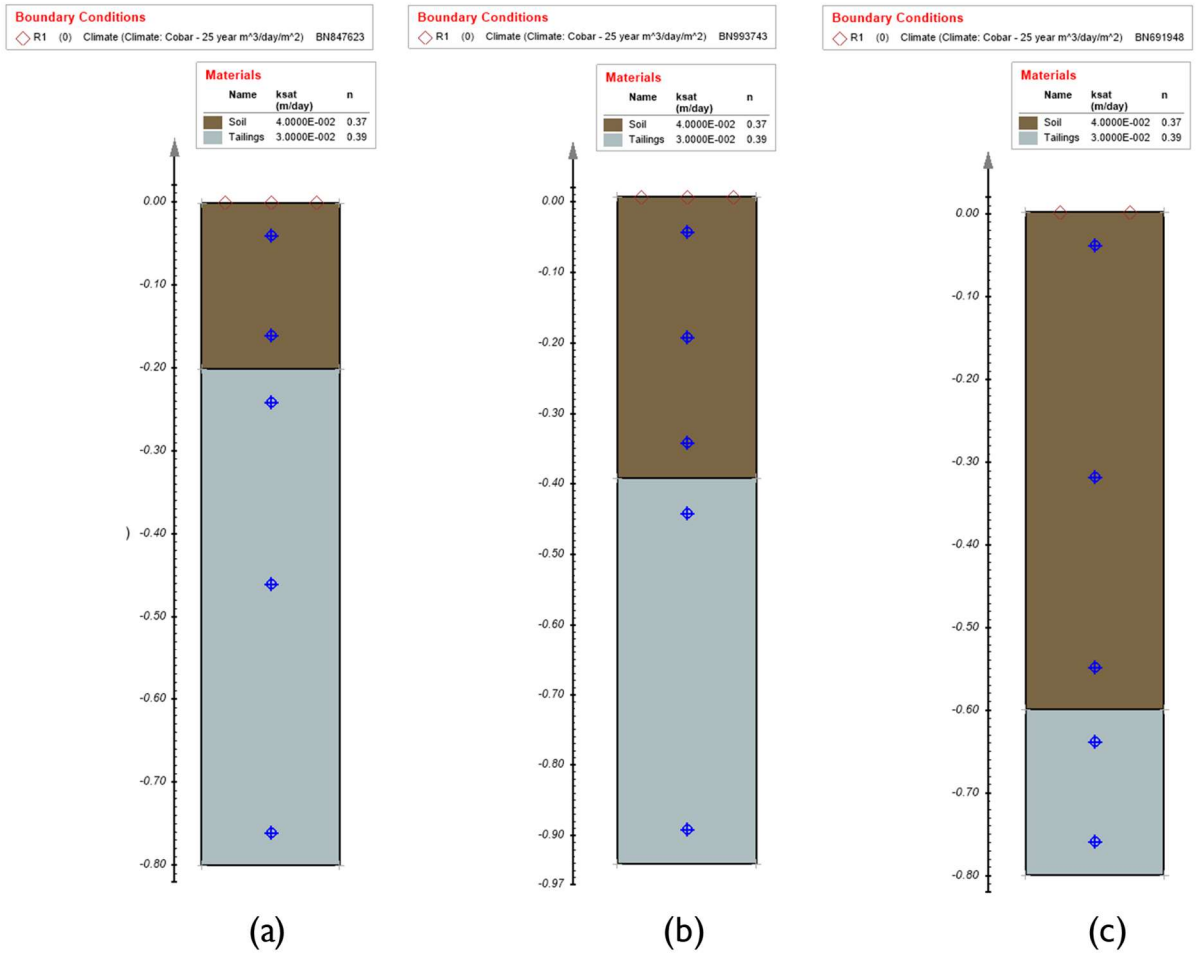


Figure 7 Model dimensions

3.1.2 Mesh geometry

The model automatic mesh generation and automatic mesh refinement algorithms were used to generate the finite element mesh in the model.

3.1.3 Initial conditions

3.1.3.1 Evaporation

Potential evaporation in the model was kept as a constant at 95% of rainfall. The potential evaporation rate is the average for the three cover column trials derived from Table 1.

3.1.3.2 Physical characteristics

a Soil water characteristic curves

The model requires soil water characteristic curves (SWCC). A SWCC is the relationship between VWC and matric suction for each depth where the sensors are placed in the cover (the in-situ results).

The in-situ SWCCs for the tailings layer and soil were fitted to the in-situ results using the Fredlund & Xing (1994) method (Figure 8).

In Figure 8:

- Figure 8a is the soil SWCC for the 0.6 m cover;
- Figure 8b is the soil SWCC for the 0.4 m cover;
- Figure 8c is the soil SWCC for the 0.2 m cover; and
- Figure 8d is the tailings SWCC for the tailings layer and was used for all cover column trials.

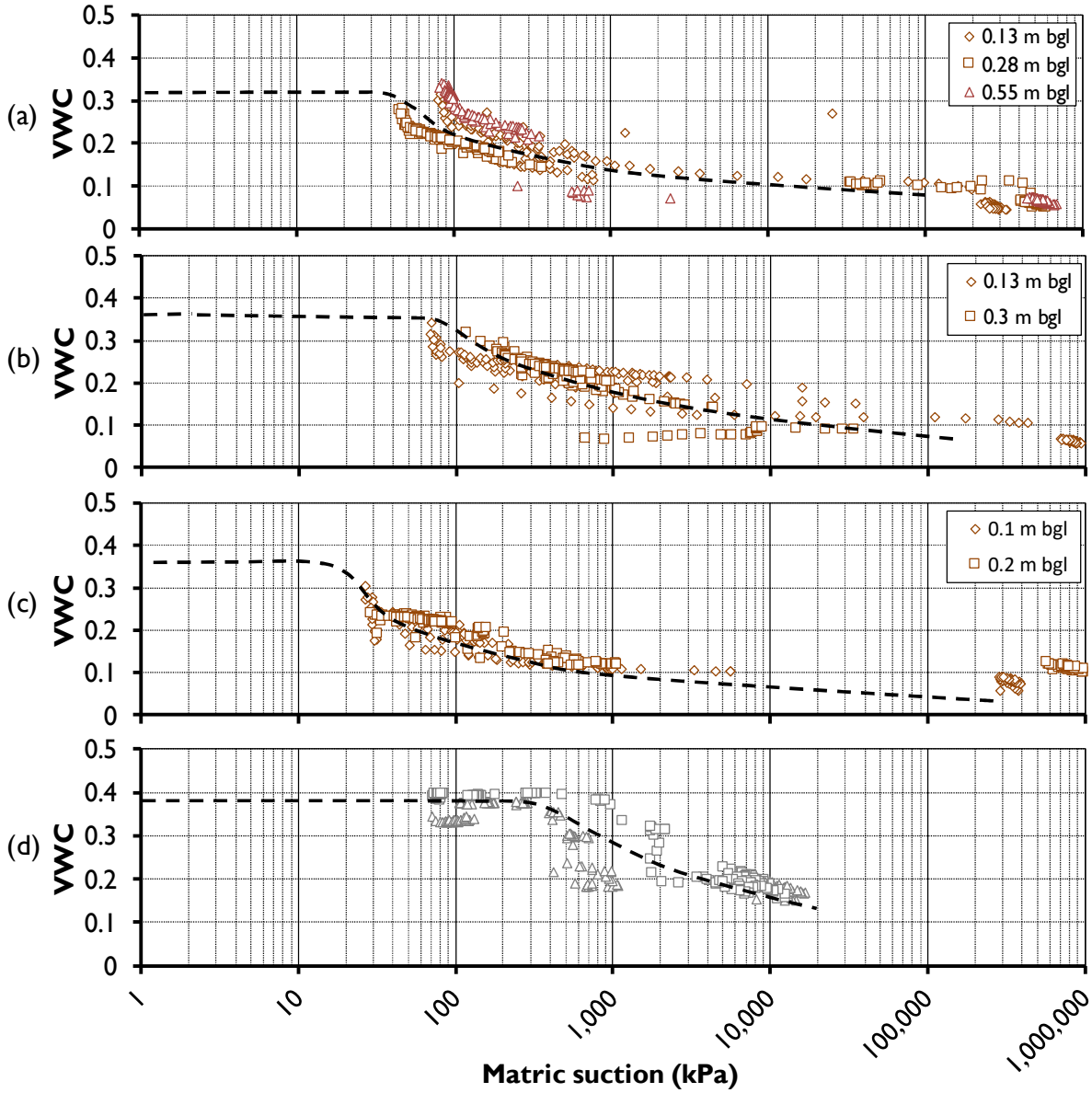


Figure 8 In-situ SWCCs

b Saturated hydraulic conductivity

The saturated hydraulic conductivity of the soil layer and tailings layer was estimated from the cover column trials by measuring the number of days for the base of each layer to measure a wetting response:

- Soil — 0.04 m/day or 4.62 x 10^{-7} metres per second (m/s); and
- Tailings — 0.03 m/day or 3.85 x 10^{-7} m/s.

c Unsaturated hydraulic conductivity

Hydraulic conductivity is the ability of the soil layers and tailings layers to transmit rainfall infiltration through the internal pore space and is defined by the rainfall infiltration velocity. The model derives unsaturated hydraulic conductivity curves from the SWCCs and the saturated hydraulic conductivity.

3.1.4 Analysis method

Rainfall data spanning 127 years from 1889 to 2015 was obtained from the Bureau of Meteorology SILO data drill (https://www.longpaddock.qld.gov.au/silo/).

The model was initially run for 25-years. The model was then run for a four month period ie the monitoring period using the artificial rainfall data described in Section 2.1.2.4.

Finally, the model was run for a dry, average and wet years described in further detail in Section 3.1.4.2.

3.1.4.1 Steady state conditions

The primary model run (25 years) allowed the initial head condition within the model to reach a steady-state.

3.1.4.2 Transient analysis

A series of transient analyses were completed using the steady state conditions as the initial conditions.

Transient analysis was completed for:

- The four months described in Section 2.1.2.4;
- the average year;
- the wet year; and
- the dry year.

The annual sequence of daily rainfall corresponding to the average wettest and driest years was selected from the ranked annual rainfalls (from wettest to driest):

- 1920 was chosen for the average year;
- 1950 was chosen for the wet year; and
- 1982 was chosen for the dry year.

The daily mean values for maximum and minimum temperature, maximum and minimum humidity and wind speed were obtained from the SILO data drill and were used for the scenarios.

The annual rainfall for the scenarios are presented in Table 2.

Table 2 Annual rainfall and evaporation for model scenarios

Scenarios	Year	Annual rainfall (mm)
Four month period	-	480 mm
Average	1920	358.2
Wet	1950	806.5
Dry	1982	101.6

3.2 Results and discussion

Figure 9a-c shows the results of the model VWC prediction compared to the in-situ results for the 0.6 m, 0.4 m and 0.2 m covers respectively. It is noticeable that the model prediction closely matches the magnitude of response measured in the cover column trials.

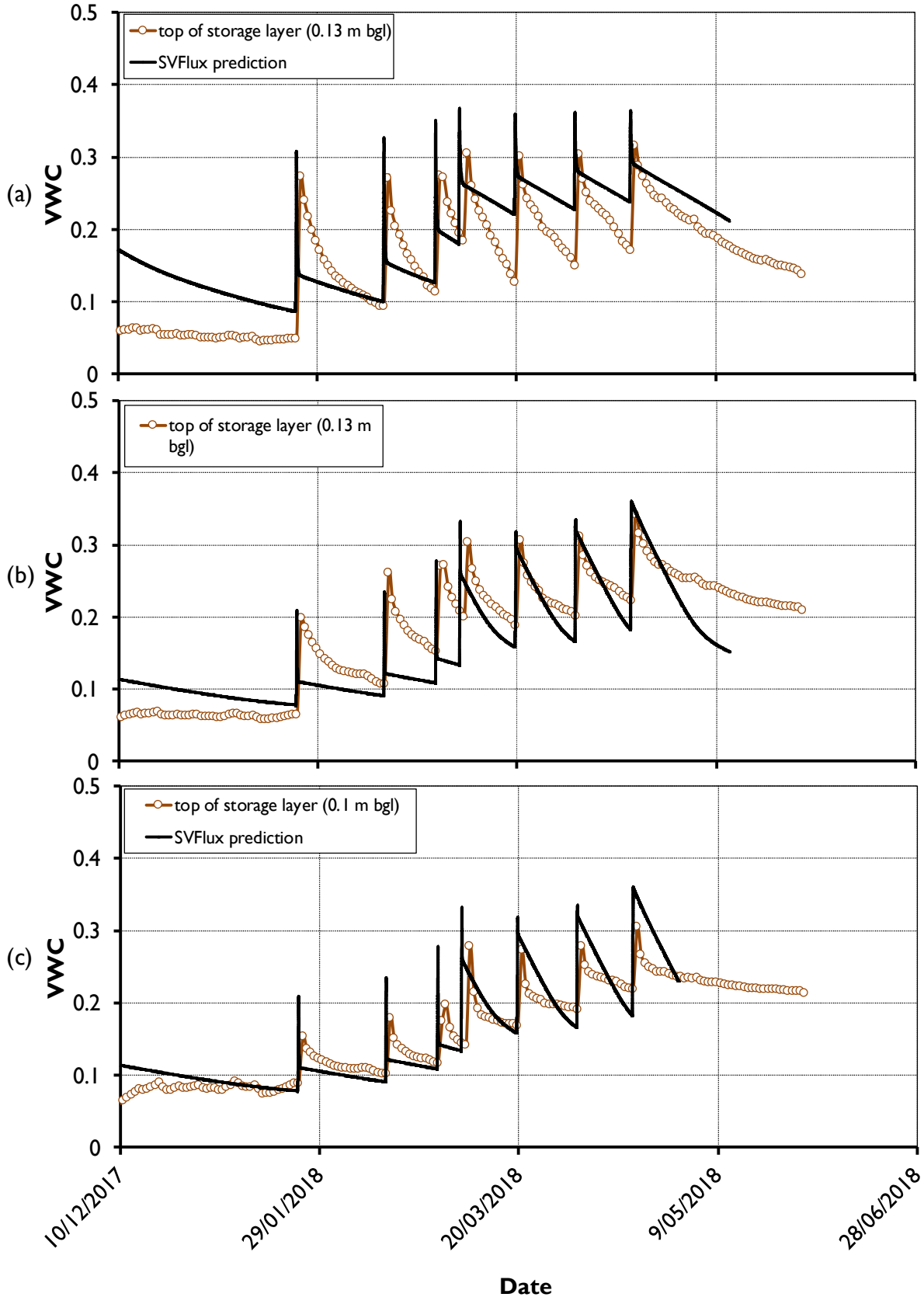


Figure 9 Model results compared to cover column trials

The model has validated the initial conditions described in Section 3.1.3 and provides actual evaporation results using the Modified Wilson Empirical Equation (Wilson et al. 1997) which are presented in Section 3.2.1.

3.2.1 Water balance

A comparison of the artificial rainfall water balance from the cover column trials to the model is presented in Table 3. The comparison shows that whilst the semi-calibrated model shows a reasonable correlation between the predicted and observed stored infiltration, it is less accurate in its prediction of seepage. Noting that the model does show the same observed trend of increasing seepage with decreasing cover thickness.

Table 3 Water balance summary for artificial rainfall

	0.6 m cover		0.4 m cover		0.2 m cover	
	Column	**Model**	**Column**	**Model**	**Column**	**Model**
Artificial rainfall (mm)	480	480	480	480	480	480
Stored infiltration (%)	3.8	8.5	2.1	1.6	1.3	2.1
Seepage (%)	1.0	0.5	1.0	6.4	6.0	12.9
Evaporation (%)	95.3	90	96.9	92	92.8	85

The inconsistency of the results is likely to do with the SWCCs. That is, the model accuracy would likely improve if the cover was represented by further segregation of the SWCCs presented in Figure 8. Further the model cannot account for macro-pore infiltration flow in response to short duration, high intensity rainfall which may result in bypass flow through the cover column trials.

3.2.2 Future cover performance

The performance of the 0.6 m, 0.4 m and 0.2 m cover was assessed for an average, wet and dry year (Table 2) and is presented in Table 4-Table 6 respectively.

Table 4 Summary of 0.6 m cover water balance for average, wet and dry years

	Dry year	**Average year**	**Wet year**
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	7.84	7.7	7.56
Seepage (%)	0.16	0.3	0.44
Actual evaporation (%)	92	92	92

Table 5 Summary of 0.4 m cover water balance for average, wet and dry years

	Dry year	**Average year**	**Wet year**
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	5.24	3.64	2.15
Seepage (%)	2.76	4.36	5.85
Actual evaporation (%)	92	92	92

Table 6 Summary of 0.2 m cover water balance for average, wet and dry years

	Dry year	Average year	Wet year
Rainfall (mm)	101.6	358.2	806.5
Stored infiltration (%)	1.2	0.3	2.7
Seepage (%)	6	7.7	17.3
Actual evaporation (%)	92.8	92	80

Comparison of Table 4-Table 6 shows that the 0.6 m cover has the best performance.

3.2.3 Performance of the 0.6 m cover to industry examples

3.2.3.1 Australian experience

Australian literature that relates to cover geometry is typically for mono (an infiltration storage layer (ISL) only) or duplex (an ISL underlain by a reduced permeability layer (RPL)) layer covers:

- Mt Whaleback Mine and Peak Gold Mine exemplify mono layer covers since the cover is an ISL only (Ayres et al. 2003; O'Kane et al. 2000 and O'Kane & Walters 2003).
- Kidston Mine, Cadia Mine, Century Mine and Mary Kathleen Mine exemplify duplex covers as the covers utilise a RPL overlain by an ISL (Williams et al. 1997; Durham 2002; Wilson 2000; Rohde & Williams 2009; Rohde et al. 2016 and Lottermoser, Costelloe & Ashley 2003).

Cover performance is difficult to determine from the literature with the reviewer often required to make some assumptions to estimate the performance of the cover where performance relies on the estimation of seepage percentage from the base of the cover. Some examples of seepage that have been reported include (Figure 10):

- 2 m and 4 m mono layer cover options for Mt Whaleback Mine;
- 1.5-2 m duplex layer cover at Kidston Gold Mine;
- 2 m duplex layer cover at Cadia Mine;
- 2 m duplex layer cover at Century Mine; and
- 1.5 m duplex layer cover at Mary Kathleen Mine.

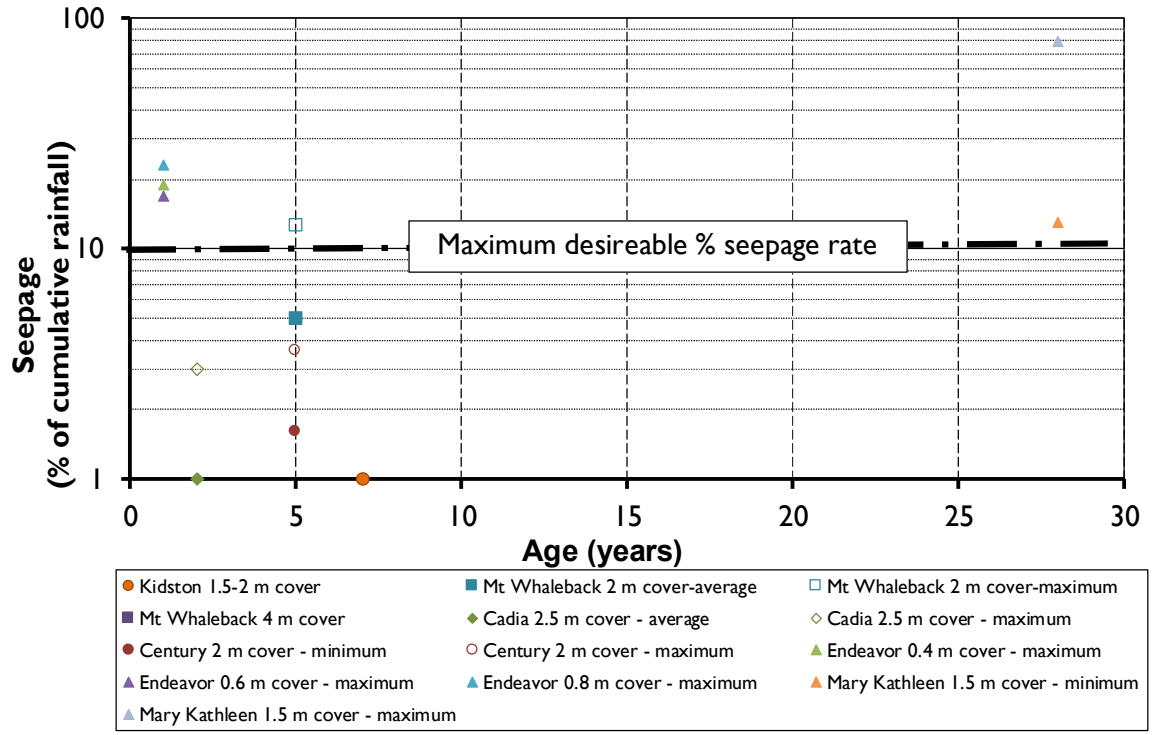


Figure 10 Performance of Australian cover trials

From Figure 10 it is notable that cover performance monitoring has only been generally reported for short periods of up to 7 years. And that performance of the covers, from the estimation of seepage percentage ranges between near zero for Kidston Mine (duplex layer cover) to nearly 30% for Mt Whaleback Mine (mono layer cover) and Mary Kathleen Mine (duplex layer cover).

The maximum desirable seepage rate shown in Figure 10 (10%) is approximately equivalent to 8.6×10^{-8} m/s being the approximate natural rate of groundwater recharge in semi-arid Australian climates (Cook et al. 2004).

Therefore, the cover column trials at the Mine indicate that the 0.6 m cover performs comparatively well against other Australian examples and is well below the maximum desirable seepage rate of 10%.

3.2.3.2 Regional experience

Regionally there is little published data that can inform cover design for the Mine. Two studies have been published for CSA Mine and Peak Gold Mine (PGM).

TSF cover trials at CSA Mine reported in the *Annual Environmental Management Report* (AEMR) (CSA Mine 2015) reports that a 0.4 m cover will hold sufficient water and nutrients to support vegetation growth, noting that the CSA Mine trials do not appear to have addressed capillarity or the ongoing ARD potential. It is also important to note that CSA Mine intend to use the near surface tailings as part of the ISL for the cover.

PGM have been running field scale cover trials since 2002, which were first set-up by O'Kane Consulting and later reported by Schneider (2012) and the University of Queensland Centre for Mined Land Rehabilitation which has been reproduced in Figure 11.

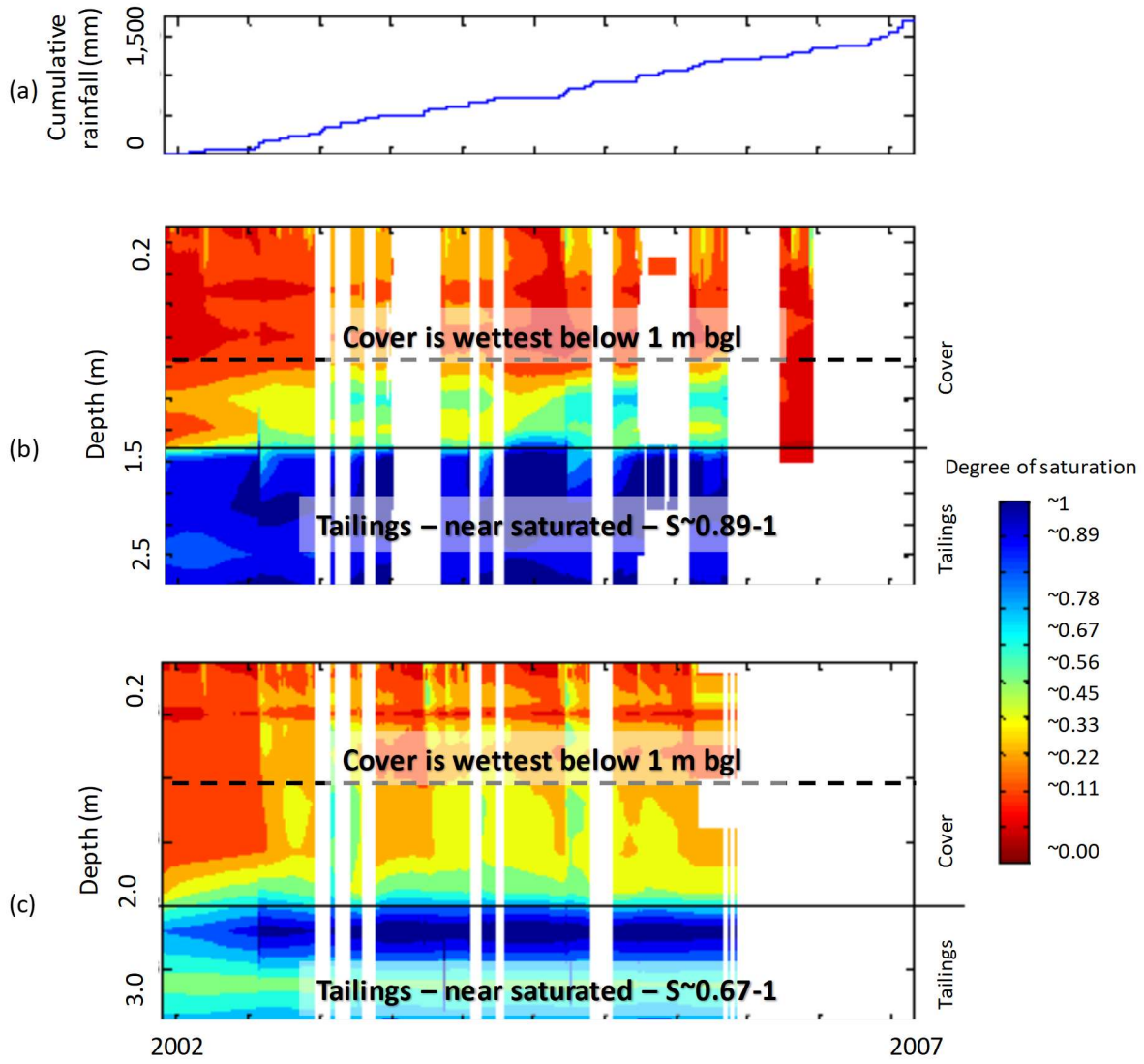


Figure 11 PGM cover trials: (a) cumulative rainfall (b) degree of saturation for 1.5 m cover trial (c) 2 m cover trial (after Schneider, 2012)

The presented PGM cover trial data spans a period of five years from 2002 to 2007 over which time approximately 1,600 mm of rainfall fell. The following overarching trends are noticeable:

- The tailings remain near-saturated throughout the monitoring period for both the 1.5 m and the 2 m cover trials with a degree of saturation (S) range of ~ 0.67-1. It should be noted that other cover trials in Australia have shown that a S greater than ~ 0.6 is sufficient to result in desaturation of the layer by seepage; or in the case of the tailings, seepage to the receiving environment (Rohde 2011);
- The infiltration storage layer below 1 m below ground level (bgl) is typically wetter than the infiltration storage layer above 1 m bgl with a S ranging between ~ 0.5-0.6. It is likely that the S is sufficient to result in seepage to the underlying tailings resulting in the high S in the tailings; and
- Evapotranspiration from vegetation is effective to a depth of 1 m bgl ie the top 1 m of the cover oscillates between partially wet (S~ 0.33) and dry (S ≤0.11). That is, infiltration that infiltrates below 1 m bgl cannot be effectively removed by evapotranspiration and has resulted in an increase in S with depth in the cover and a high S in the underlying tailings.

Unlike the CSA Mine cover described previously, it is not the intention of the cover at PGM to use the surface of the tailings as part of the rooting zone. Therefore, the near-saturated conditions at the surface of the tailings indicate an increased potential for seepage.

Regional experience indicates that a thick cover, as has been used elsewhere in Australia, may result in reduced cover performance because not all infiltration can be effectively removed by evapotranspiration. The review of CSA Mine and PGM suggests that the optimum cover thickness for the region is likely between 0.4-1 m with covers thicker than 1 m potentially increasing the risk of seepage.

Therefore, the findings of this study, that a 0.6 m cover is the best performing cover, based on cover column trial experiments is supported by regional and Australian experience.

4.0 Conclusion and recommendations

This study has shown through cover column trials and a semi-calibrated model that a 0.6 m cover over the TSF will significantly reduce the potential for rainfall infiltration into the potentially contaminating tailings. A reduction of rainfall infiltration will limit the potential for environmental harm through ARD.

The cover column trials were commissioned in December 2017 and were subjected to ~ a years' worth of rainfall over a four month period to develop a maximum water balance. The water balance of the cover column trials was measured by calibrated matric suction sensors and VWC sensors. Seepage from the base of the cover column trials was measured by rain gauge tipping buckets. The cover column trials showed that as the cover thickness decreased the seepage rate increased. Notwithstanding, the optimum cover thickness from the cover column trials was found to be the 0.6 m cover.

Following the column trials, the maximum water balance was used to develop a semi-calibrated model in SVFlux. The model used SWCCs, saturated hydraulic conductivities and potential evaporation rates derived from the cover column trials. The semi-calibrated model showed a good correlation to the observed results and it was accepted that the semi-calibrated model could be used to predict the long-term performance of the covers.

Finally, the cover column trials performance was simulated for a wet, average and dry year to predict the likely long-term performance of the three cover thicknesses (0.6 m, 0.4 m and 0.2 m) had they been built on the TSF. The long-term prediction showed that the 0.6 m cover provided the best balance between rainfall infiltration storage and seepage. Seepage was predicted to be under 1% in the long-term. The performance of the thinner covers was less successful with the 0.4 m cover likely to allow ~ 6% seepage and the 0.2 m cover likely to allow 17% seepage.

By comparison to Australian examples of covers that have been built on mine sites, the 0.6 m cover is expected to perform comparatively and below the 10% maximum desirable seepage range reported in Section 3.2.3. Regional experience (at PGM and CSA Mine) indicates that a thick cover, as has been used elsewhere in Australia, may result in reduced cover performance because not all infiltration can be effectively removed by evapotranspiration. The review suggests that the optimum cover thickness for the region is likely between 0.4-1 m with covers thicker than 1 m potentially increasing the risk of seepage.

Therefore, the findings of this study, that a 0.6 m cover is the best performing cover, based on cover column trial experiments and modelling is supported by regional and Australian experience.

4.1 Recommendations

Three recommendations are made from this study:

1. The cover column trials should be moved to an uncovered position so that they are exposed to naturally occurring rainfall and evaporation. Further vegetation should be established on the trials. This will allow the water balance to be further refined, including the prediction of long-term performance.
2. The potential harmful effects of capillary rise of salts and metals into the cover, which could limit vegetation establishment should be assessed. This could include periodic sampling of the column cover trials once recommendation one is implemented.
3. Large field trials should be established and monitored prior to building the preferred cover on the TSF. The final decision on cover thickness should be made based on (field) monitoring data for infiltration and seepage.

References

Ayres B, Silveria C, Ellice C, Christenson D and O'Kane, M (2003). *Development of a Cover System Design for Potentially Acid-Forming Tailings at Peak Gold Mine*, in in AB Fourieand M Tibbett (eds),. Proceedings of Sixth International Conference on Mine Closure.

Campbell Scientific, (2000). *Instruction Manual for TDR100 Revision 4/02*, http://s.campbellsci.com/documents/sp/manuals/tdr100.pdf.

EMM Consulting Pty Limited, (EMM) (2016). *Review of Cover Thickness for the Tailings Storage Facility*. Report prepared for Hera Resources Pty Limited.

Flint A, Campbell G, Ellet P & Calissendorff C, (2002) *Calibration and Temperature Correction of Heat Dissipation Matric Potential Sensors*. Soil Science Society of America Journal, 66, 1439-1445.

Fredlund DG & Xing A, (1994). *Equations for the soil water characteristic curve*, Canadian Geotechnical Journal, Vol. 31, No. 3, pp. 521-532.

Geoslope, (2012). *Vadose Zone Modelling with VADOSE/W*, viewed at http://www.geo-slope.com/products/vadosew.aspx.

O'Kane M and Walters P (2003). *Dry Trial covers at Mt Whaleback - A Summary of Overburden Storage Area Cover System Performance*., in AB Fourie and M Tibbett (eds), Proceedings of Sixth International Conference on Mine Closure.

O'Kane M, Porterfield D and Weir A (2000). *Cover System Performance in a Semi-Arid Climate on Horizontal and Sloped Waste Rock Surfaces*., in unknown (eds), Proceedings of Fifth International Conference on Acid Rock Drainage.

R.W Corkery and Co Pty Limited, (2011). *Hera Project, via Nymagee Environmental Assessment Major Project Application No. 10_0191*. Report prepared for YTC Resources Limited, viewed at http://www.ytcresources.com/public/documents/7/18/52/Environmental%20Assessment%20Web%20Ve.

R.W Corkery and Co Pty Limited, (2013). *Mining Operations Plan Version 3.1 May 2013*. Report prepared for YTC Resources Limited.

Rohde TK, Williams DJ and Burton J (2011). *Store and release cover performance at Cadia Hill gold mine, Australia*., in AB Fourie and M Tibbett (eds), Proceedings of Sixth International Conference on Mine Closure.

Rohde, TK, Defferrard P and Lord M (2016). *Store and release cover water balance for the south waste rock dump at Century mine.* Proceedings of the 11th International Conference of Mine Closure.

Scheinder A C, (2012). *Plant-soil relationships in constructed covers of mine waste material*. PhD thesis (Unpublished), University of Queensland, Queensland.

Stuart Miller and Associates (1990). *Rehabilitation of the Elura Mine No 1 Tailings Stack Assessment of Cover Design Options*. Report prepared for MPA Williams and Associates.

Williams DJ, Wilson G and Currey N (1997). *A cover system for potentially acid forming waste rock dump in a dry climate*., in unknown (eds), Proceedings of the Fourth International Conference on Tailings and Mine Waste.

Wilson GW, Fredlund DG & Barbour SL (1997). *The effect of soil suction on evaporative fluxes from soil surfaces.* Canadian Geotechnical Journal, Vol. 34, No. 4, pp. 145-155.

Appendix A – Matric suction sensor calibration method

The following methodology was used to calibrate the matric suction sensors:

1. Dry sensors in bucket of silicon beads for 48 hours (hrs).
2. Oven-dry all soil and tailings samples at 105°C for 24 hours. This is equivalent to 1,000,000 kPa of matric suction.
3. Place silicon dried sensors into oven dried soil and allow to come to equilibrium for 24 hrs. After 24 hrs the ΔT is measured by wiring sensors to the data logger. Measured ΔT is equivalent to matric suction at 1,000,000 kPa.
4. Dismantle and place sensors into a water chamber for 24 hours to completely saturate sintered ceramic heads. After 24 hours the ΔT is measured by wiring sensors to the data logger. Measured ΔT is equivalent to matric suction at 0 kPa. Sensors are not saturated under vacuum conditions as this will not be achievable prior to in-situ installation. Calibration aimed to replicate in-situ conditions as much as practicable.
5. Place air dried soil and tailings into cement mixer and wet up to saturation. Soil is laid out on a free draining table to allow excess water to drain off (this was the air-entry value/field capacity). This step takes about 12 hours to complete. Soil is then packed into jars to a density equal to field density. The sensors are allowed to come to equilibrium for 6 hours. After 6 hours the ΔT is measured by wiring sensors to the data logger. Measured ΔT is equivalent to matric suction at 10 kPa. Matric suction is confirmed by sub-sampling.
6. Sensors are then allowed to dry over a 6 day cycle with samples collected from close to the sensor on every other day. ΔT is measured at the time of sampling. Sample temperature is allowed to come to equilibrium at approximately 25°C prior to sub-sampling.
7. Total suction is measured directly on all sub-samples using a water potential dew-point meter. Matric suction is calculated from EQ A.1 and EQ A.2.

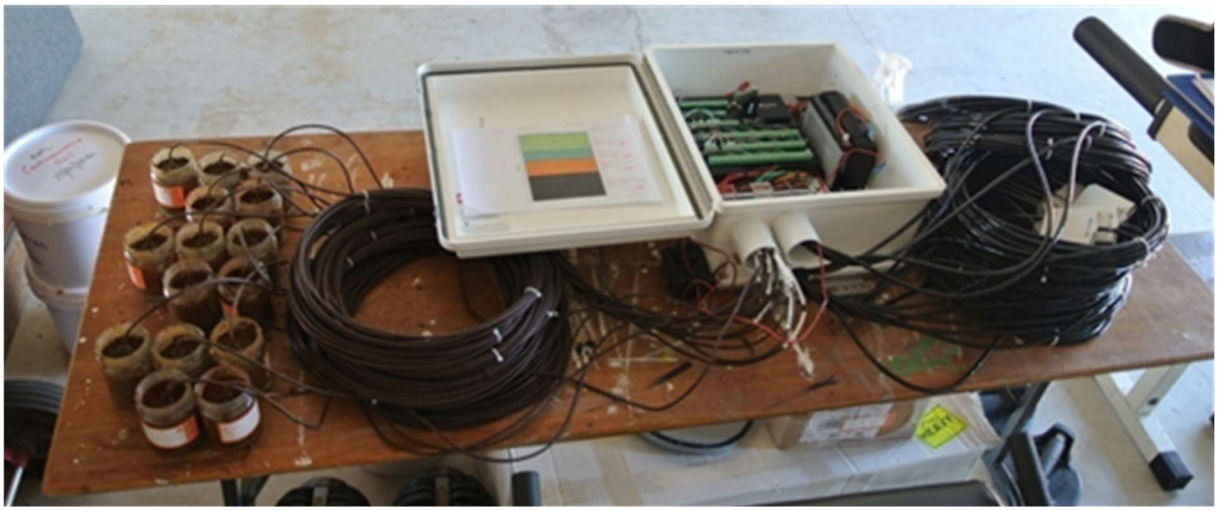
Total Suction = Matric suction + Osmotic suction EQ A.1

Osmotic Suction = 0.36 × EC (deciSemens per metre (dS /m)) EQ A.2

The ΔT is measured by reading the heating element temperature at one second and 30 seconds via a thermocouple embedded within the sensor head adjacent to the heating element.

Photograph 4 illustrates the experiment set up for calibration. Matric suction sensors are embedded at the expected field density and wired to the data logger ready for measuring the ΔT.

Figure 12 illustrates the relationship between the calibration methodology and the SWCC. The calibration method was used to derive a four-point calibration function spanning the full range of expected matric suctions that may be encountered in-situ.



Photograph 4 Matric suction sensor calibration

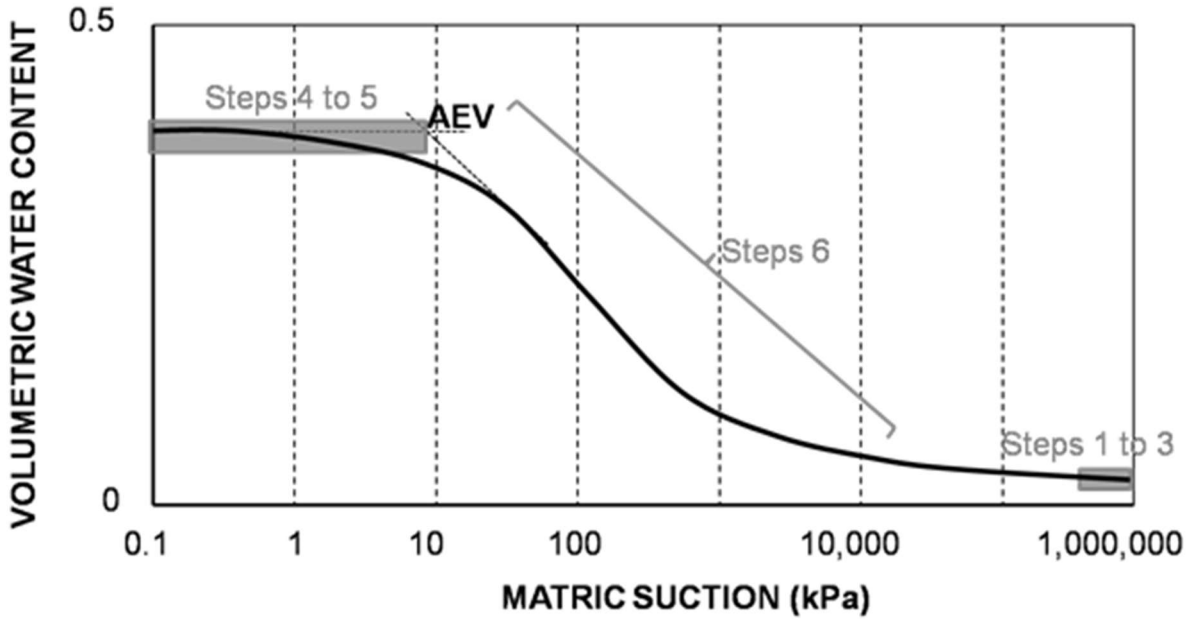


Figure 12 Generalised SWCC illustrating which part of the SWCC are measured by the calibration method

Appendix B – Matric suction sensor calibrations

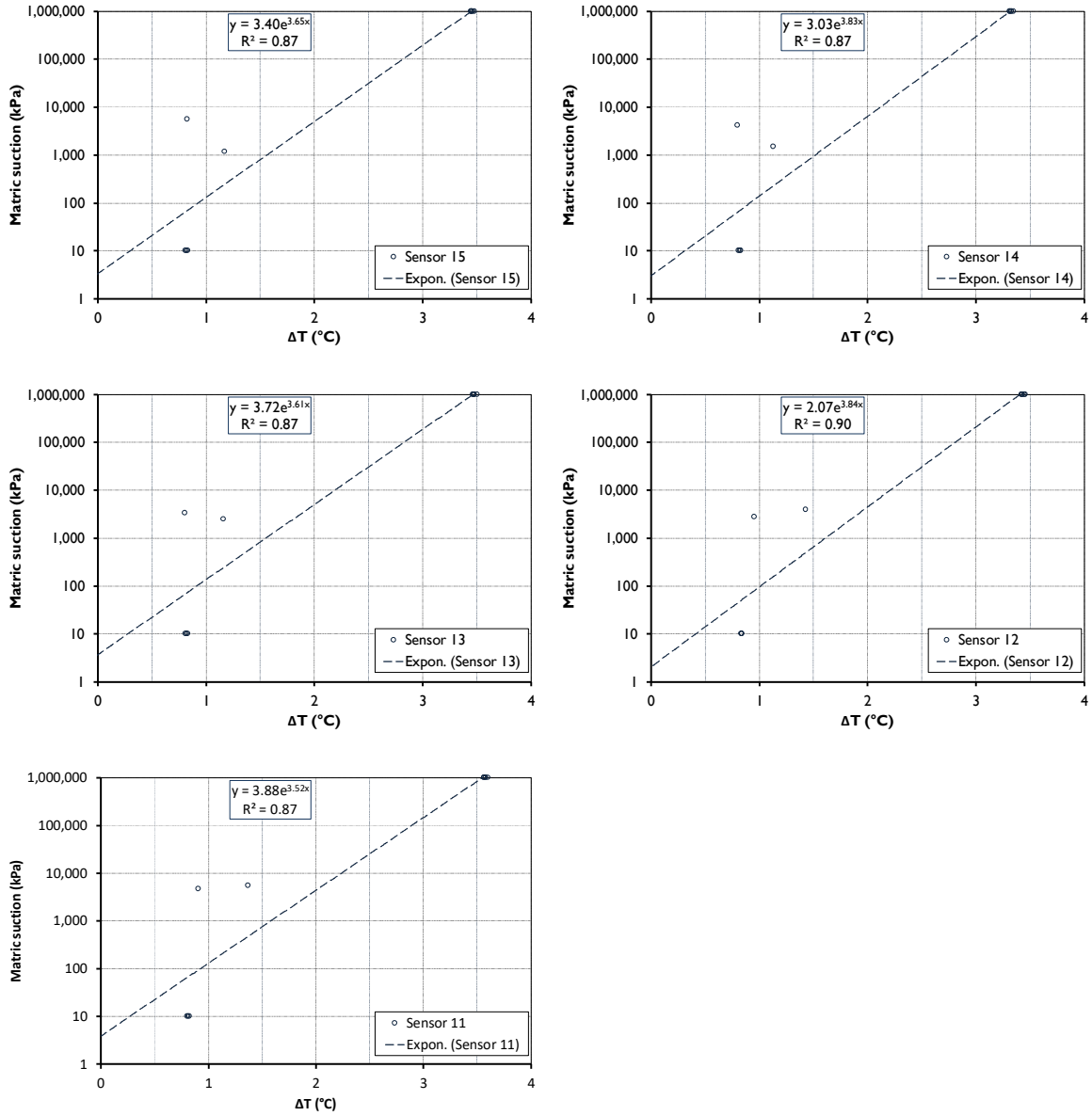


Figure 13 0.6 m cover matric suction sensor calibration curves

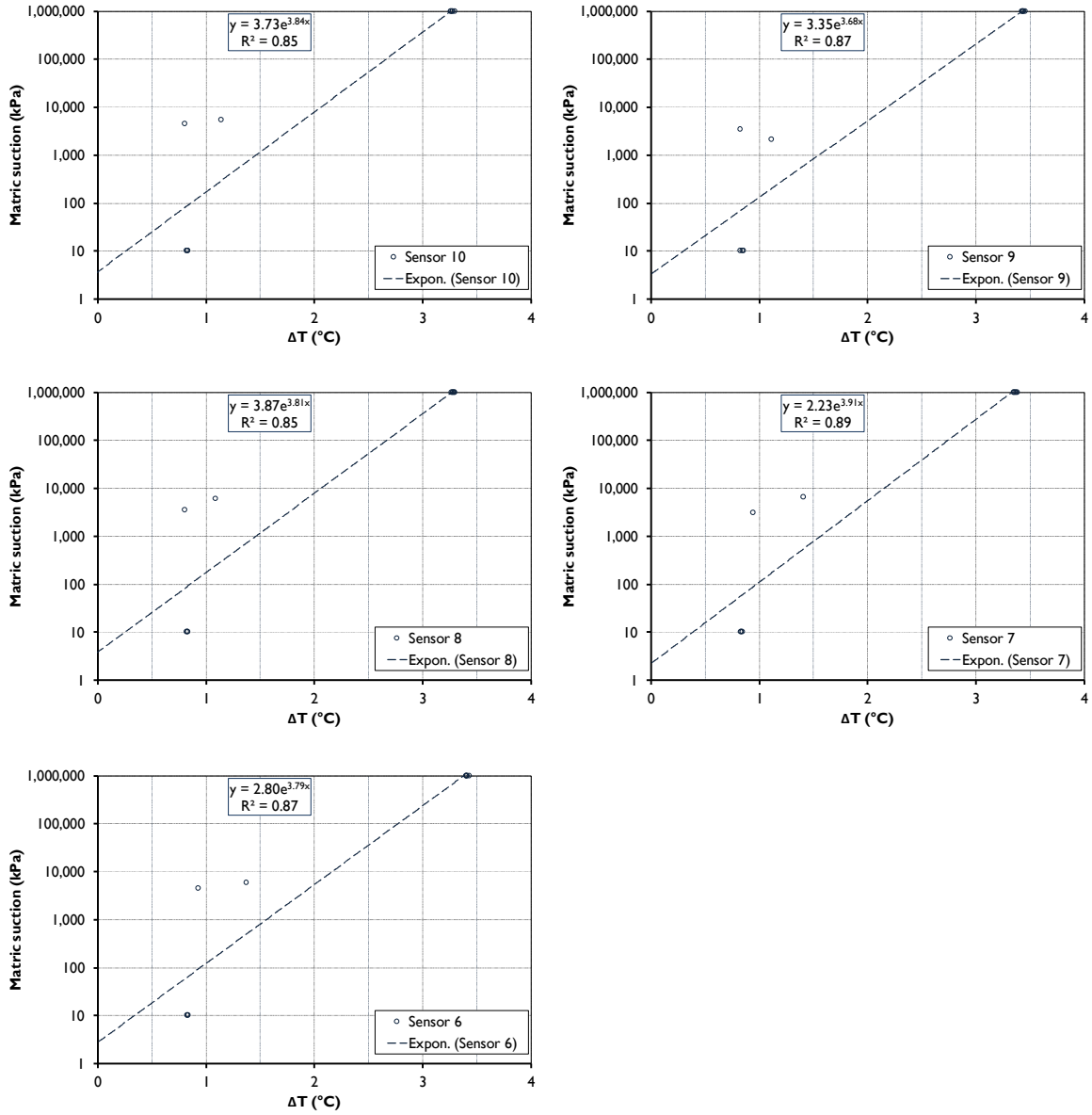


Figure 14 0.4 m cover matric suction sensor calibration curves

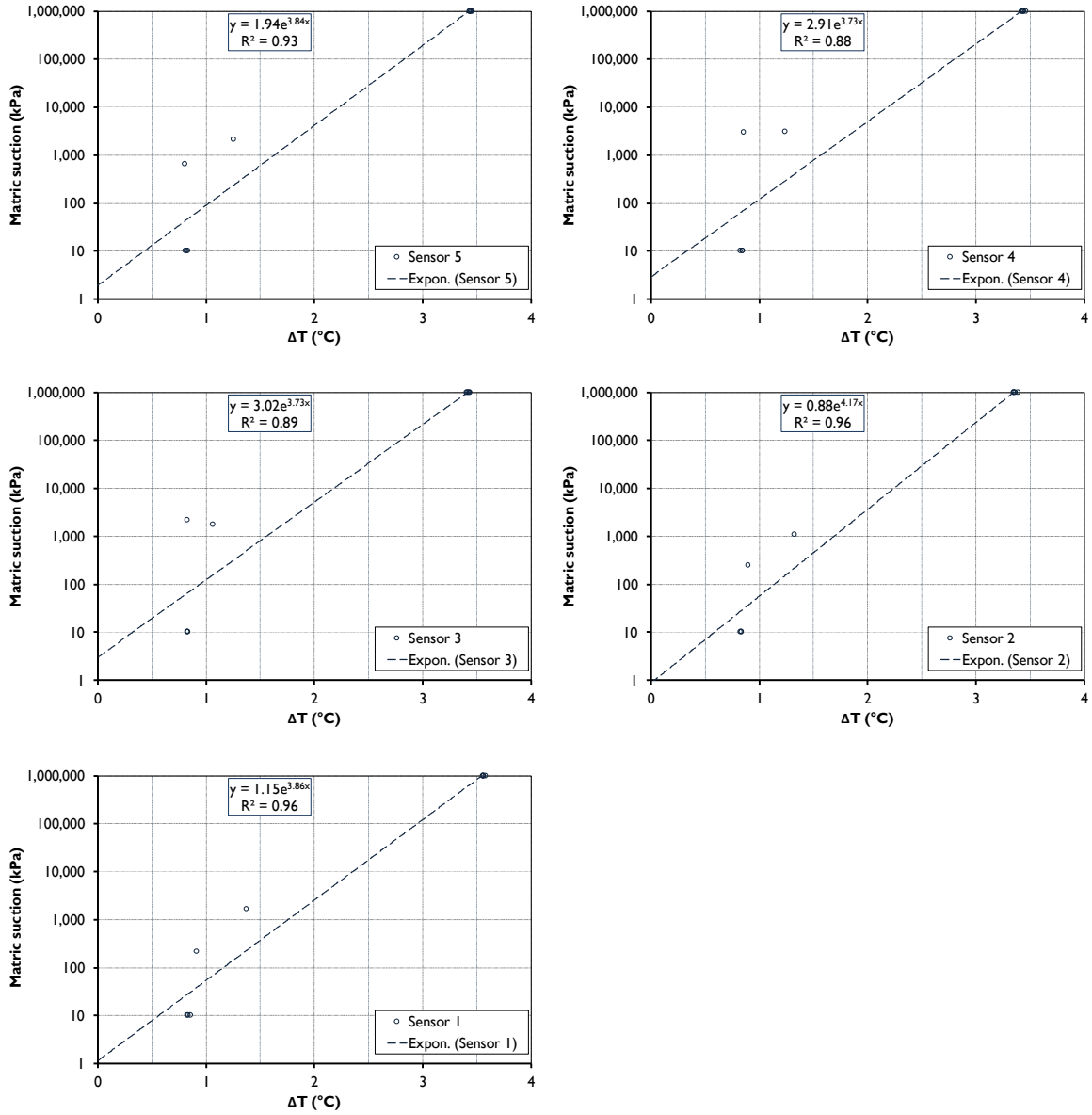


Figure 15 0.2 m cover matric suction sensor calibration curves

Appendix B – VWC and matric suction sensor results

C.1 Matric suction

Figure 16 presents the matric suction results for the alternative cover options. Artificial rainfall is shown as an inset on the figure. Figure 16 shows that:

- all three cover thicknesses are initially dry with matric suctions close to 1,000,000 kPa;
- upon wetting of the cover column trials with artificial rainfall event:
    - the 0.2 m cover becomes near-saturated soon after the first 100 mm, with the matric suction of the soil layer reducing to ~ 80 kPa (Figure 16c);
    - the 0.4 m and 0.6 m cover perform similarly to alternative cover option 1 with the exception that they take longer to become near-saturated, which is not achieved until after the second addition of 100 mm of artificial rainfall.

All three cover thicknesses oscillate between near-saturated and unsaturated throughout the wetting period, however; the covers all trend towards near-saturated with time because the rate of artificial rainfall addition exceeds the rate of evaporation (Figure 16a, b & c). Because of the near-saturated conditions in the covers:

- the tailings beneath the 0.2 m cover begin to wet-up within 50 days indicating that saturated breakthrough has occurred through the cover (Figure 16c);
- the tailings beneath the 0.4 m cover begin to wet-up after 65 days indicating that saturated breakthrough has occurred through the cover (Figure 16b); and
- the tailings beneath the 0.6 m cover begin to wet-up after 85 days indicating that saturated breakthrough has occurred through the cover (Figure 16c).

C.2 VWC

Figure 17 presents the VWC results for the three cover thicknesses. Artificial rainfall is shown as an inset on the figure. The VWC results for the three cover thicknesses mirror the wetting and drying trends discussed in Section C.1 for matric suction and are not discussed further in this report.

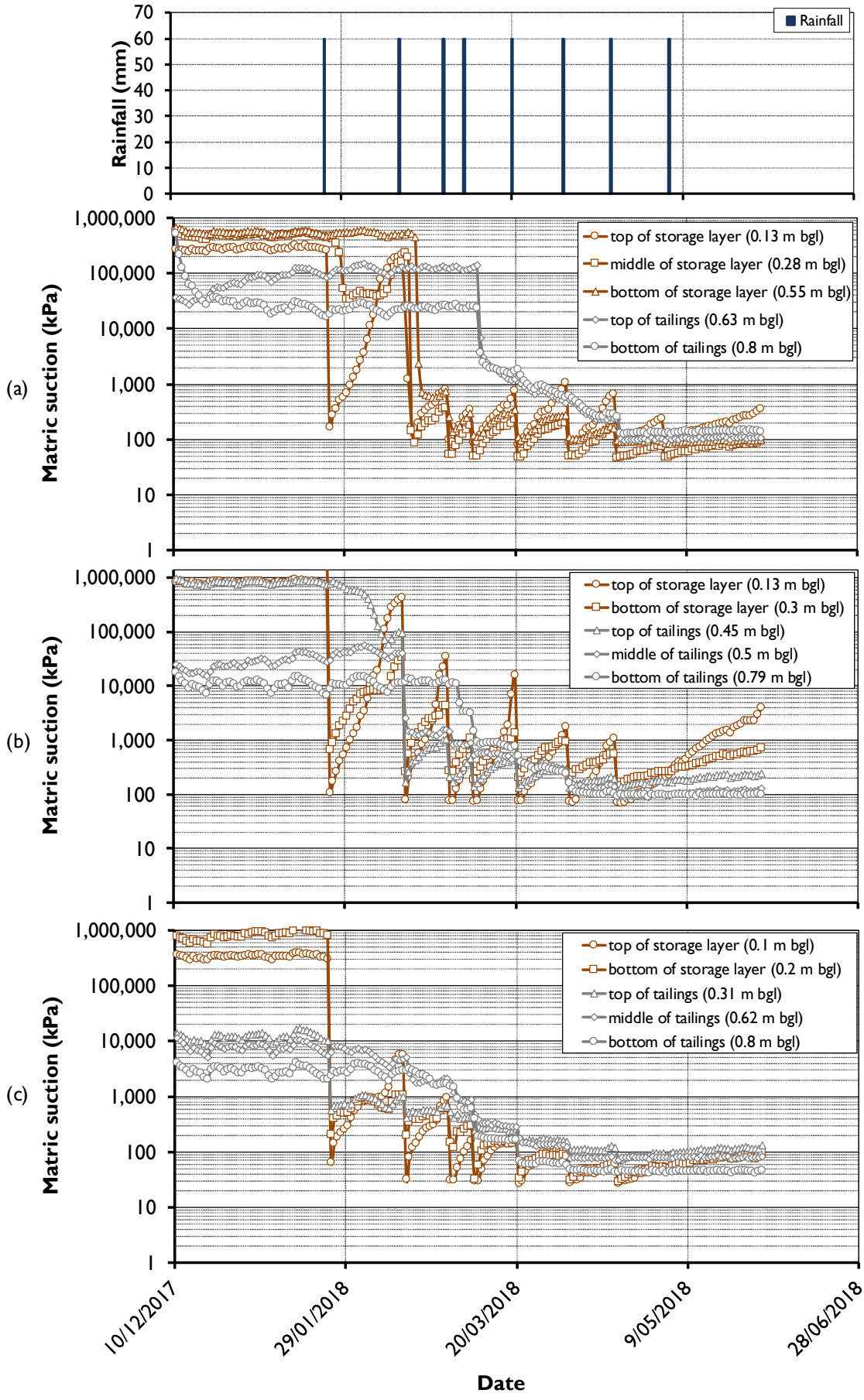


Figure 16 Cover column trial matric suction results

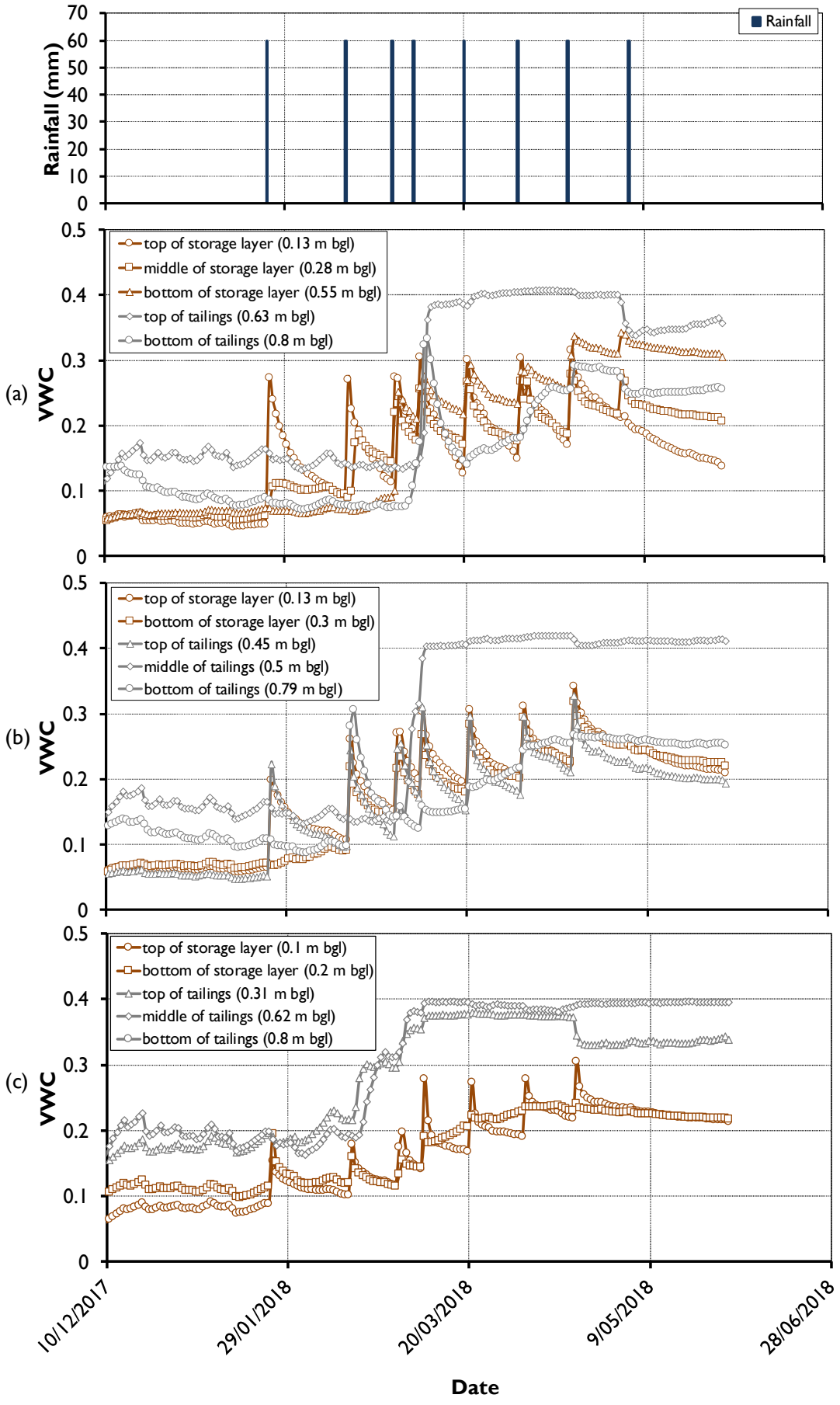
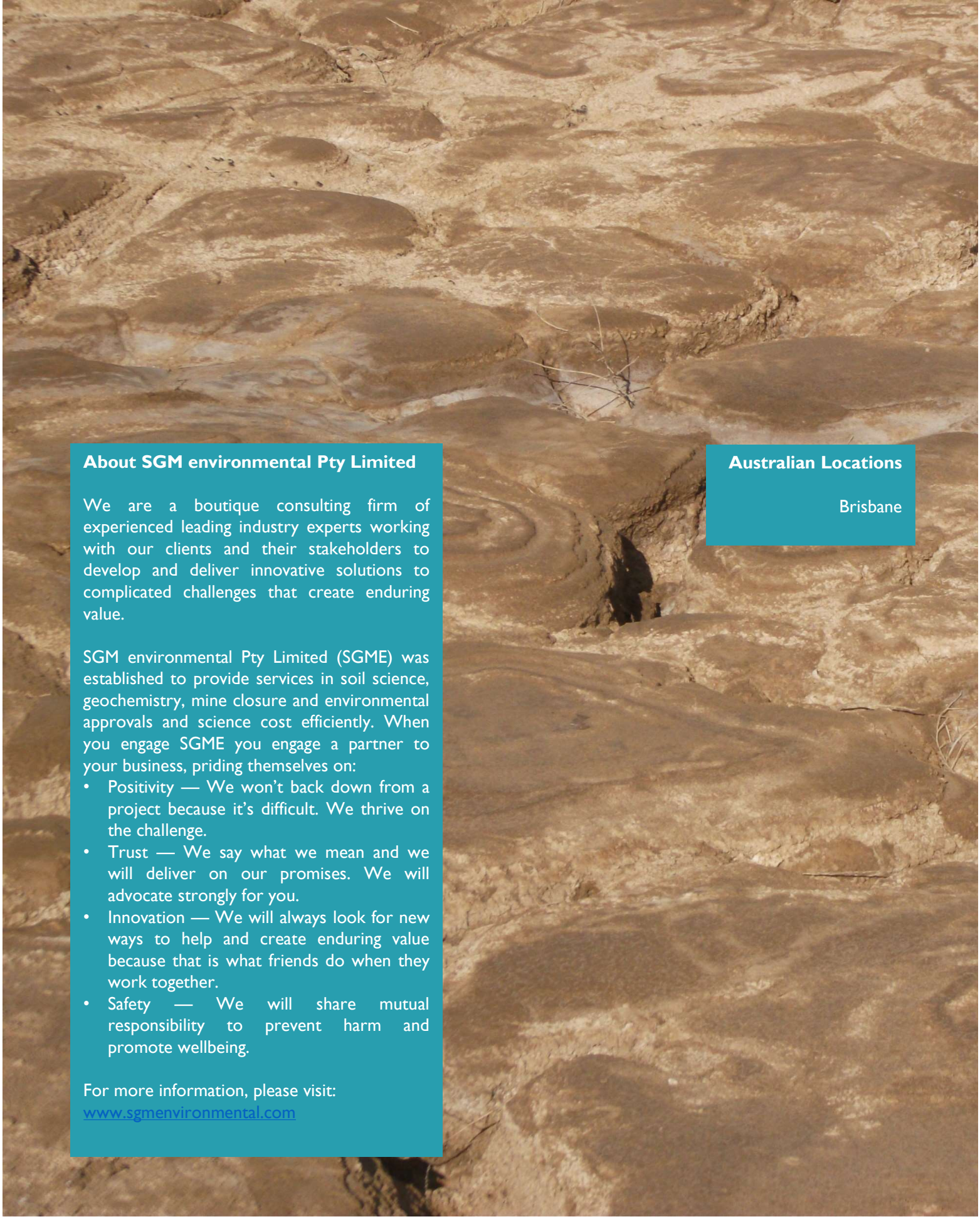


Figure 17 Cover column trials VWC results

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- Positivity — We won't back down from a project because it's difficult. We thrive on the challenge.
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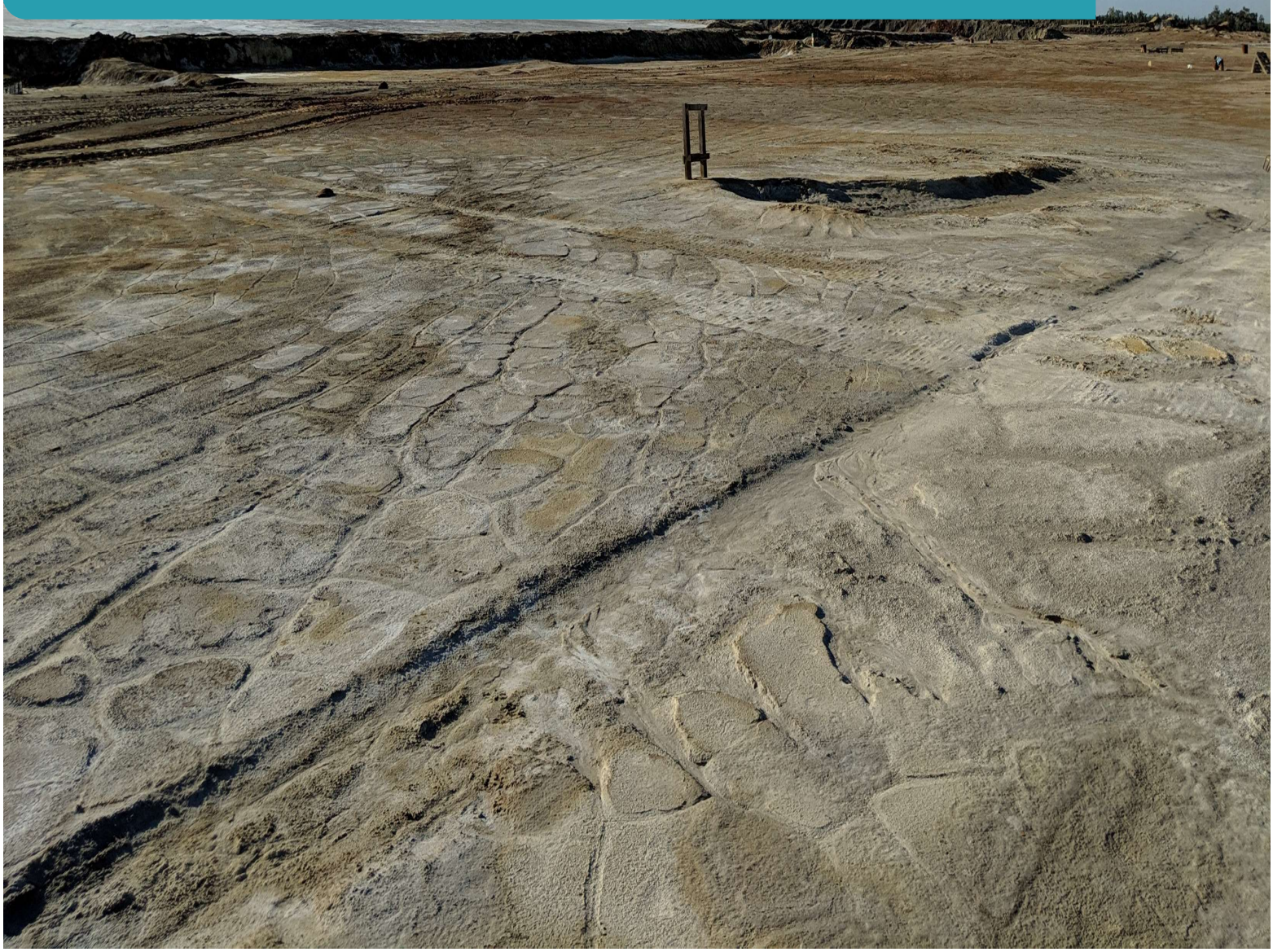
Australian Locations

Brisbane

aurelia METALS Ltd.

SGMenvironmental

Appendix B – VWC and matric suction results



B.1 Matric suction

Matric suction results are only available for the period from 30 October 2018 to 31 March 2019. The matric suction sensors ceased to function from 31 March onwards (the date of the first artificial watering event). The results are therefore not shown.

B.2 VWC

Figure 9 presents the VWC results for the trial. Data was only available from four VWC sensors as the fifth VWC sensor did not record measurements throughout the trial period. Figure 9 shows that:

- The entire soil layer is initially dry with a volumetric water content of ~0.1.
- upon wetting of the trial with artificial rainfall:
    - the top of the layer starts wetting up after the first artificial rainfall event and reaches near saturation (~0.33 VWC) (206.2 mm);
    - the upper part of the layer starts wetting up after the first artificial rainfall event before reaching near saturation in between the first and second artificial rainfall event (~0.25 VWC) (~206.2 mm);
    - the middle of the layer starts wetting up in between the first and second artificial rainfall event and progressively gets wetter (albeit with periods of declining VWC between rainfall events) before reaching near saturation after the fourth artificial rainfall event (413 mm) (~0.28 VWC); and
    - The lower part of the layer starts wetting up after the second artificial rainfall event and progressively gets wetter (albeit with periods of declining VWC between rainfall events) before reaching near saturation after the fourth artificial rainfall event (~0.33 VWC).
- The trial oscillates between near-saturated and unsaturated throughout the wetting period, however; the cover trends towards near-saturated with time as the rate of artificial rainfall addition (in combination with natural rainfall) exceeds the rate of evaporation.

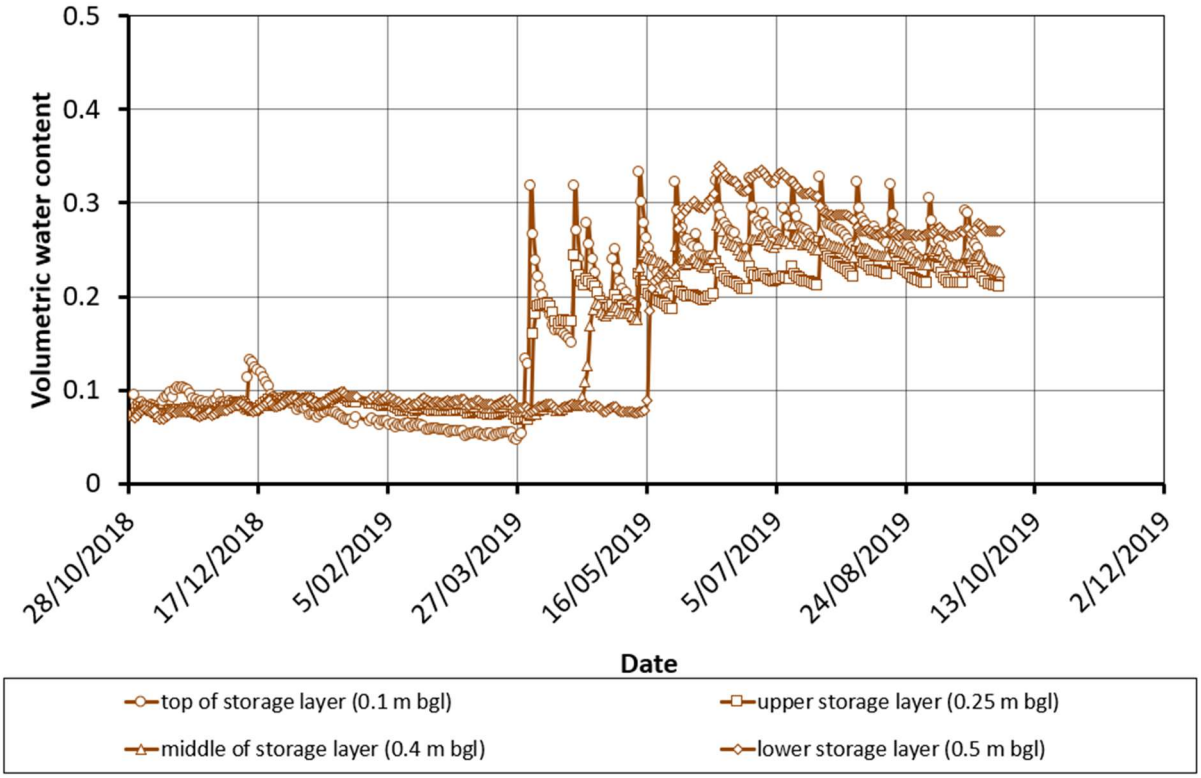
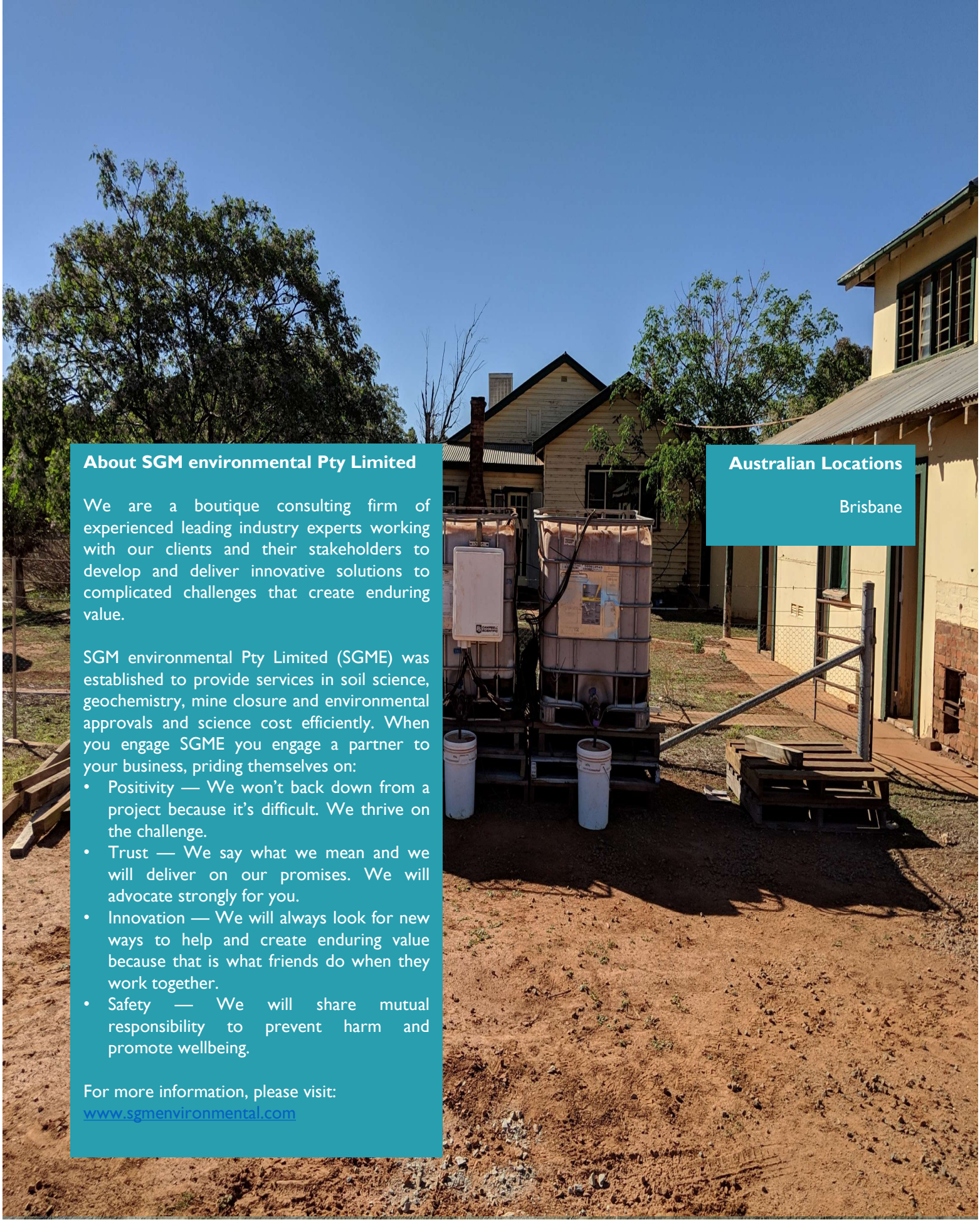


Figure 9 The trial VWC results

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- Trust — We say what we mean and we will deliver on our promises. We will advocate strongly for you.
- Innovation — We will always look for new ways to help and create enduring value because that is what friends do when they work together.
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Australian Locations

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Appendix E 2019 Independent Environmental Audit

BARNETT & MAY

Hera Mine

Independent Environmental Audit

Prepared for

Hera Resources Pty Ltd.

Client representative

Liam Richards

Date

6 March 2020

Revision 0



Contents

1

1. Introduction....4
   1.1 Hera Project. 4
2. Definitions....5
3. Auditor Certification....7
   3.1 Auditee Details 8
4. Audit process....9
   4.1 Preliminary activities 9
      4.1.1 Approval of audit teams 9
      4.1.2 Consultation with Agencies 9
   4.2 Information Review and Compliance Register 10
   4.3 Site audit 10
      4.3.1 Opening Meeting 10
      4.3.2 Site Inspections 10
      4.3.3 Site Interviews 10
      4.3.4 Document review 11
   4.4 Reporting 11
5. Stakeholder Consultation....13
6. Statutory Compliance and Recommendations....16
   6.1 Summary of Compliance Status 16
   6.2 Non-Compliances and other recommendations 16
7. Independent Audit Post Approval Requirements....31
   7.1 Project Environmental Management System 31
   7.2 Implementation of the Operational Environmental Management Plan and Sub-plans 32
   7.3 Status of Previous IEA Findings 33
   7.4 Specialist Auditor Reports 42
   7.5 Operational Environmental Impacts 42

List of tables

Table 1 - Compliance Assessment Matrix....11
Table 2 - Risk Assessment Matrix....12
Table 3 - Summary of Stakeholder Inputs....13
Table 4 - Summary of Statutory Compliance....16
Table 5 - Statutory Non-Compliances....17
Table 6 - Status of 2016 Audit Findings....33
Table 7 - Predicted vs Actual Impacts....42

Appendices

Appendix A – Audit Table

Appendix B - Audit Photographs

Appendix C - Auditor Approval Letter

Prepared by — K. Holmes		**Date – 6 March 2020**

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft for client Review	K. Holmes	A. Wilkins	K. Holmes	24 February 2020
0	Final Report	K. Holmes	A. Wilkins	K. Holmes	6 March 2020

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1. Introduction

Hera Resources Pty Ltd, a wholly owned subsidiary of Aurelia Metals Ltd, is the operator of the Hera Project (PA 10_0191) located approximately 100 km south east of Cobar in western new South Wales. The operations commenced on April 2014.

The purpose of the audit, that was undertaken in accordance with the **Barnett and May's** proposal (dated 5 September 2019), was to determine if the compliance obligations contained in the Project Approval (PA 10_0191) Schedule 5, Conditions 9 and 10, which states:

> *C9 - "Within one year of the commencement of development of the site, and every three years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:*
>
> *(a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;*
>
> *(b) include consultation with the relevant agencies;*
>
> *(c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any relevant EPL or mining lease (including any assessment, plan or program required under these approvals);*
>
> *(d) review the adequacy of strategies, plans or programs required under the abovementioned approval or licences; and*
>
> *(e) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or Program required un these consents.*
>
> *Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.*
>
> *C10 – Within six weeks of completion of the audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the Audit Report.*

The Audit was commissioned on October 2019 following approval of the audit team by DPIE. The site inspection was undertaken by Ken Holmes (Accredited Lead Auditor) of Barnett & May from 19 November to 21 November. The audit covered the period from 25 September 2016 to 30 September 2019 (the Audit Period).

1.1 Hera Project.

The Hera Project is located approximately 100km south-east of Cobar in central NSW. Producing gold-silver doré bars and a 'bulk' (lead and zinc) concentrate, Hera is an underground mine utilising long-hole open stoping in a combination of bottom-up and top-down directions. The stopes are backfilled with cemented rock fill (CRF), waste rock fill or a combination of both. The Hera Process Plant is designed to process 505,000 tonnes per.

2. Definitions

Acronyms	Description
ACHMP	Aboriginal Cultural Heritage Management Plan
AER	Annual Environmental Review
AR	Annual Review
AQGMP	Air Quality and Greenhouse Gas Management Plan
BMP	Blast Management Plan
BioMP	Biodiversity Management Plan
BOS	Biodiversity Off-set Strategy
BSC	Bogan Shire Council
CC	Construction Certificate
CCC	Community Consultative Committee
CSC	Cobar Shire Council
DPE	Department of Planning and Environment (former planning department name)
DPI	(former) Department of Primary Industries
DPIE	Department of Planning, Industry and Environment.
EMS	Environmental Management System
EMSt	Environmental Management Strategy
EPA	NSW Environment Protection Authority
EP&A Act	NSW Environmental Planning and Assessment Act
EPBC	Environmental Protection and Biodiversity Conservation Act
EPL	Environmental Protection License
GMP	Groundwater Management Plan
FHA	Final Hazard Analysis
HMMP	Hazardous Materials Management Plan
IEA	Independent Environmental Audit
LMP	Landscape Management Plan

Acronyms	Description
MOP	Mining Operations Plan
NOW	NSW Office of Water
NMP	Noise Management Plan
OC	Occupation Certificate
OEH	NSW Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
PA	Project Approval
PIRMP	Pollution Incident Response Management Plan
REF	Review of Environmental Factors
RMP	Rehabilitation Management Plan
SWB	Site Water Balance
SWMP	Surface Water Management Plan
SWVR	Surface Water Validation Report
TMP	Traffic Management Plan
TSF	Tailing Storage Facility
WMP	Water Management Plan
WRE	Waste Rock Emplacement
WRMP	Waste Rock Management Plan

3. Auditor Certification

Independent Audit Certification Form	
Development Name	Hera Project
Development Consent No.	10_0191
Description of Development	Gold /Silver/Lead / Zinc Mine
Development Address	Nymagee, New South Wales
Proponent	Aurelia Metals Limited
Operator Address	Suite 5, Level 2, 60-62 McNamara Street, Orange
Title of Audit	Hera Project Independent Environmental Audit

I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:

• The audit has been undertaken in accordance with relevant approval condition(s) and in general accordance with
the auditing standard AS/NZS ISO 19011:2011 and in general conformance with the DPE's Independent Audit Post Approval Requirements (June 2018).

• The findings of the audit are reported truthfully, accurately and completely;

• I have exercised due diligence and professional judgement in conducting the audit;

• I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit;

• I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child;

• I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);

• Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit;and

• I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

Note.

a) The Independent Audit is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Signature	
Name of Lead/Principal Auditor	Ken Holmes
Address	4 Baeckea Place, Frenchs Forest, NSW
Email Address	ken@baeckea.com.au
Auditor Certification (if relevant)	Exemplar Global 14065
Date	6 March 2020

3.1 Auditee Details

Audit Title:	**Hera Project Independent Environmental Audit**
Site:	Hera Project, Nymagee, New South Wales
Client Contact:	Liam Richards
Position:	Environmental Advisor
Client:	Hera Resources Pty Ltd
Client Address:	Suite 5, Level 2, 60-62 McNamara Street, Orange
Client Phone Number	0431 422 151
Client Email:	liam.richards@aureliametals.com.au
Audit Team:	Ken Holmes – Certified Lead Auditor
Auditor's Telephone:	0438 046 261
Auditor's Email:	ken@baeckea.com.au
Date of Site Visit	19-21 November 2019
Audit Scope:	The audit was undertaken as per the brief outlined in the Barnett and May proposal (dated 5 September 2019). As such, the audit provides an assessment of the compliance of the project with the conditions Consent 10_0191.

4. Audit process

The audit process and methodology are summarised in this section, and comprised the following key undertakings:

- Preliminary planning activities
- Review of information and preparation of a compliance register (audit protocol / checklist)
- Site inspection and interviews:
    - Opening meeting
    - Site inspection
    - Review of relevant records
- Review of additional information provided after the site inspection
- Preparation of this audit report.

4.1 Preliminary activities

Off-site planning for the site audit comprised:

- Initial discussions with client representative, to organise the site inspection and access to audit documentation
- Prepare the audit compliance checklist
- Completion of a project specific Risk Assessment
- Review of online information
- Submission of a preliminary document / record request
- Consultation with relevant agencies.

4.1.1 Approval of audit teams

Hera sought the Secretary's endorsement for the audit team to undertake this Independent Environmental Audit.

The Secretary approved the following team on 14 September 2019 (Appendix C):

- Ken Holmes – Certified Lead Auditor
- Adam Bishop – Surface Water Management
- Martin Jacobs – Hydrology and Water Modelling

4.1.2 Consultation with Agencies

The Auditor consulted with the following agencies during the audit planning stage:

- Department of Planning, Industry and Environment (DPIE);
- NSW Environment Protection Authority (EPA);
- Cobar Shire Council (CSC);
- Bogan Shire Council (BSC); and
- Community Consultative Committee (CCC).

Emails were initially sent (via Email) to each of the above agencies advising them of the audit and the scope of the audit and inviting them to provide comments/requirements or specific environmental issues they required the audit to target. Where required (where no response was provided by the nominated stakeholder organisation) a follow up email was sent to repeat the invitation to provide input into the audit.

4.2 Information Review and Compliance Register

Prior to the site inspection the Auditor prepared a detailed audit checklist (spreadsheet) that was used to assess and track compliance. This spreadsheet formed the basis of the compliance register presented in the Appendices of this report.

4.3 Site audit

The site inspection component of the audit was undertaken over three days from 19 to 21 November 2019.

4.3.1 Opening Meeting

Following site inductions, the opening meeting was held on-site. It was attended by the following personnel:

- Liam Richards (Environmental Advisor)
- Scott Ramsay (Mine General Manager)
- Ken Holmes (Lead Auditor) – Barnett ad May.

Introductions were made, and the purpose and scope of the audit was outlined. An explanation of the audit process was communicated. That is, a site inspection, site interviews and detailed review of records in order to identify compliance with the approval conditions relevant to the current operations at the site.

4.3.2 Site Inspections

A initial tour of the site was undertaken by the Auditor, accompanied by Mr Richards and Mr Thompson. Subsequent detailed inspections of specific areas of the operation were subsequently undertaken. The site inspection included observation of:

- Site Access and Security;
- Surface mine infrastructure;
- Processing Plant;
- Tailings Storage;
- Waste storage areas;
- Fuel and dangerous goods storage areas;
- Equipment maintenance area;
- Rehabilitation Areas; and
- Surface water management infrastructure.

4.3.3 Site Interviews

Audit interviews comprised of a series of meetings with:

- Liam Richards (Environmental Adviser); and
- Jonathon Thompson (Group Manager Environment)
- Scott Ramsay (General Manager)
- Kent Ward (Commercial Manager)

- Terry Cox (Acting Maintenance Superintendent)

4.3.4 Document review

Compliance related documents that were not available prior to, and during site discussions of, the audit, were requested to be provided following the audit. The Auditee's personnel assisted with the provision of documentation following the audit, through secure file transfer mechanisms. The key documents reviewed during this audit are listed in the Compliance Registers against specific conditions.

4.4 Reporting

The compliance register was completed using notes and observations recorded during the site inspection / interviews and review of appropriate documentation. The completed compliance register is presented in **Appendix B**. A summary of the non-compliances identified during this audit are provided in Table 1. The audit criteria used to determine compliance for this audit is defined in Table 2..

Table 1 - Compliance Assessment Matrix

Assessment	Criteria
Compliance	Compliance • The site complies with the requirements of applicable pre-operational Consent Conditions. • A judgment made by an auditor that the activities undertaken, and the results achieved fulfil the specified requirements of the audit criteria. While further improvements may still be possible, the minimum requirements are being met.
Non-Compliance	Non-Compliance • Clear evidence has been collected to demonstrate the requirement has not been complied with and is within the scope of the audit. • Site displays little or no evidence of compliance with the requirements of the regulatory documentation. Note: Where the auditor has not been able to collect enough verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit. In the absence of enough verification, the auditor may in some instances be able to verify by other means (visual inspection, personal communication, etc.) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. As the condition cannot be verified it is treated as a non-compliance.
Not Triggered	Not Applicable / Not Triggered • The respective condition / requirement was not activated within the scope of the audit.
Noted	A statement or fact, where no assessment of compliance is required.

Risk levels for each non-compliance identified have been assessed in accordance with

Table 2 - Risk Assessment Matrix

Risk Level	Description
High	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences but is likely to occur.
Low	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences but is likely to occur.
Administrative non-compliance	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).

5. Stakeholder Consultation

Table 3 - Summary of Stakeholder Inputs provides a summary of the Stakeholder Consultation undertaken by the Auditors.

Table 3 - Summary of Stakeholder Inputs

Department	Contact	Consultation Actions	Stakeholder Comments	Auditor Response
NSW Department of Planning, Industry and Environment	Katrina O'Reilly – Senior Compliance Officer.	1. Email sent 30 Oct 2019. 2. Follow up email sent on 19 November 2019. 3. Telephone response received on 20 November 2019. No further consultation was undertaken.	Issues for consideration during the audit: • Tailing Management • Cyanide (WAD) levels • Height of stockpiles • Compensatory water supply agreements with neighbours • Site water management • Erosion and sediment control • Dust emission events	The Auditor reviewed each of these issues during the Audit.
Cobar Council	Garry Ryman – Director Planning and Environmental Services	1. Email sent 30 Oct 2019. 2. Follow up email sent on 19 November 2019. No further consultation was undertaken.		No response was received from Council.
Bogan Shire Council	Graham Burke – Director Engineering Services	1. Email sent 20 November 2019. 2. No further consultation was undertaken.		No response was received from Council.
NSW EPA	Brooke Emerton (Regional Operations Officer)	1. Email sent 30 Oct 2019. 2. Email received on 6 November 2019.	The only ongoing issue with Hera that I can see so far is exceedance of WAD Cyanide levels which has been recorded on their annual returns.	The Auditor noted this requirement during the Audit and has addressed WAD compliance and complaints in this Audit Report.

Department	Contact	Consultation Actions	Stakeholder Comments	Auditor Response
			Recently the EPA have been receiving complaints from the neighbouring property relating the air (dust) and noise pollution too which I am currently looking into.	
		1. Email sent 30 Oct 2019. 2. Follow up email sent on 19 November 2019.		
Natural Resources Access Regulator	Tim Baker – Senior Water Regulation Officer	1. Email sent 30 Oct 2019. 2. Follow up email sent on 19 November 2019.		No response was received from DPI
Resources Regulator	Mark Buchan – Senior Inspector Environment	1. Email sent 30 Oct 2019. 2. Follow up email sent on 19 November 2019.	I suggest you contact the EPA regarding the Hera Mine site regarding non-compliance issues. There have been multiple pollution reporting incidents required over the last few years. Ranging from dust, noise and water issues.	The Auditor has contacted the EPA for comment.
CCC	Garry West (Chair)	1. Email sent 30 Oct 2019. 2. Email received on 8 November 2019.	Your email was reported to the Community Consultative Committee (CCC) at yesterday's meeting and nobody raised any matters needed to be addressed by the Auditor. As the Independent Chair (appointed February 2018) I note that at all CCC meetings the company openly reports on matters covering compliance and environmental performance. Any non-compliances are noted and what rectification is being undertaken and when completed. The CCC is always advised if any penalties have been raised by the regulators.	No issues have been raised by the CCC.

Department	Contact	Consultation Actions	Stakeholder Comments	Auditor Response
			I am always prepared to learn what changes may be necessary from time to time to improve the monitoring role of the CCC and if as a result of your audit you identify any matters you believe the committee should consider implementing I would be pleased to hear from you.	

6. Statutory Compliance and Recommendations

Compliance with the Conditions of Consent and the Environment Protection Licence has been reviewed by assessing compliance against the various documentation related to project approval, as listed in section 2.2 of this report. The Compliance Register presented in Appendix B provides a detailed review of the compliance status of the site, including recommendations to address non-conformances.

6.1 Summary of Compliance Status

A summary of compliance with pre-operations statutory requirements is provided in Table 4 - Summary of Statutory Compliance. The number of conditions include sub-clauses within each approval document.

Table 4 - Summary of Statutory Compliance

Approval/ Licence	No. of Conditions	Compliant	Non-Compliant	Noted	Not Triggered
10_0191	172	112	34	6	20
EPL 20179	75	40	7	24	4
ML 1686	48	23	1	15	9
TOTAL	295	175	42	45	33

6.2 Non-Compliances and other recommendations

Non-compliances identified during the site inspection, interviews and document reviews are recorded in detail in the Compliance Registers in **Appendix B** and are summarised in Table 5.

Table 5 - Statutory Non-Compliances

No.	Condition	Observation	Recommendation	Risk Level
PROJECT APPROVAL – 10_0191				
S2.1	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any **material harm** to the environment that may result from the construction, operation or rehabilitation of the project.	As a result of two (self-reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	The cleanup actions relating to the incidents have been completed - there are no further actions required.	**Medium**
S2.2	The Proponent shall carry out the project generally in accordance with the: (a) EA; and (b) conditions of this approval.	During the Audit period, the Waste Rock stockpile height exceeded the 10m height limit. The Auditor notes that the proposed Modification 5 seeks to increase the Waste Rock stockpile height to 15m. It is the Auditor's view that an increase in stockpile height will not result in an additional impact on the environment.	Ensure that the waste rock dump height is maintained below the approved height.	**Low**
S2.7	The Proponent shall comply with the operating hours: (a) Vegetation Clearing: 7am to 6pm , 7 days a week (b) Construction: 24 hours, 7 days a week (c) Mining, maintenance and processing: 24 hours, 7 days a week (d) Rehabilitation: Day /Evening (e) Transportation of Concentrate and Gold Ore: 7am to 10pm , 7 days a week.	One non-compliance (concentrate truck departure at 0600) occurred during the Audit Period. No complaints relating to out of hours works (including truck movements to and from site) are recorded on the complaints register that has been uploaded to the Hera website. The Drivers Code of Conduct includes the requirement that no concentrate transport should occur outside of daylight hours (specifically 0700 to 1930).	No action required; the drivers code of conduct is up to date.	**Low**

No.	Condition	Observation	Recommendation	Risk Level
S2.13	Until they are replaced by an equivalent strategy, plan or program approved under this approval, the Proponent shall implement the existing strategies, plans or programs for the site that have been approved under the approved exploration activities described in Review of Environmental Effects entitled “Exploration Decline at the Hera Deposit within Exploration Licence 6162”.	The Environmental Management Strategy and related sub-plans required by this Approval have been drafted. All the plans are not up to date and / or approved (by DPIE). The unapproved plans are being implemented as opposed to the plans provided in the REF. The management plans that are loaded onto the company website are assumed to be those that are current and being implemented. Each of the Plans has been reviewed by the Auditor and while generally technically appropriate, they contain some inaccurate information, including for example regulatory references.	Finalise the consultation and update of the 2019 versions of the management plans and then seek DPIE approval for the revised plans.	**Administrative non-compliance**
S3.3	The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. The plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval within six months of this approval;	A noise management plan has been prepared, the version on the Hera website is the 2013 update. No correspondence was available to verify that this plan was approved by DPE or that the EPA was consulted during preparation of the Plan. Finding: NOT VERIFIED NOTE: The Auditor assumes that the 2013 version of the NMP is the current version. Email correspondence from 2017/18 indicates that an updated to that plan was prepared and sent to DPE for review in 2017. DPE provided comment on the plan, however the plan has not been approved by DPE. No correspondence was sighted the confirmed that the EPA was consulted during the preparation of the 2017 Noise Management Plan update.	Finalise the review and stakeholder consultation of the 2019 version of the NMP to ensure it up to date then, then seek DPIE approval for the revised plan.	**Administrative non-compliance**
S3.12	The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 4, 5 or to 6 at any privately-owned land.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on	**Low**

No.	Condition	Observation	Recommendation	Risk Level
	See Tables 2 - 4, including the notes on page 7 of the permit	impact of the mine operations.	background dust levels.	
S3.12	The Proponent shall ensure that all point-source discharge locations on the site are designed and operated to comply with the maximum discharge concentrations applicable under the Protection of the Environment (Clean Air) Regulation 2010 and the requirements of any Environment Protection License issued for the project under the POEO Act.	Two licensed air emission point sources are located that the site (the gold room stacks, EPL Sampling Points 24 and 39). The emission testing results for September 2018 found that cadmium levels exceeded the Environment (Clean Air) Regulation (2010) emission limits.	Ensure that any emission limit exceedances are fully investigated and reported to the EPA and DPIE.	**Administrative non-compliance**
3.15	The Proponent shall prepare and implement an Air Quality and Greenhouse Gas Management Plan. The plan must: (d) include an air quality monitoring program that: (i) uses a combination of high volumes samplers and dust deposition gauges to evaluate the performance of the project; and (ii) includes a protocol for determining exceedances of the relevant conditions of this approval; and	Section 6 of the plan addresses air quality monitoring. Dust deposition monitoring and HVAS sampling (including PM10 monitoring) is covered in the plan, however the monitoring of the Gold room stacks is not covered in the plan, this is a requirement of the EPL. The monitoring plan must include all EPL monitoring requirements.	Ensure that the 2019 version of the AQGGMP details all monitoring and compliance assessment actions required by this Approval and the EPL.	**Administrative non-compliance**
3.18	The Proponent shall ensure that all surface water discharges from the site comply with: (a) section 120 of the POEO Act; or (b) the discharge limits (both volume and quality) set for the project in any applicable EPL.	The 2016/7 Annual review reported that two discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharge occurred on 16 December 2016 and was reported to the DPE, EPA and DRE. The 2017/8 Annual review reported that there were several WAD cyanide incidents during this reporting period	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	**Medium**
3.19	The concentration of Weak Acid Dissociable (WAD) cyanide in tailings			**Medium**

No.	Condition	Observation	Recommendation	Risk Level
	discharged from the discharge point to the tailings storage facility shall not exceed 10 mg/L.	The 2018/9 Annual Review reported that During the reporting period there were no discharges from the sediment basin and no flows recorded in the clean water by pass drain through site. There were also no flows in any creeks or drainage courses across site as a result of the extended drought. Therefore, no surface water monitoring of creeks or drainage lines was able to be undertaken.		
3.20	The concentration of Weak Acid Dissociable (WAD) cyanide at the discharge point to the process water dam shall not exceed 20 mg/L (90th percentile) or 30 mg/L (maximum).			**Medium**
S3.22	The Proponent shall ensure that the floor and walls of: (a) the leachate management pond, seepage collection pond (associated with the tailings storage facility), process water dam and raw water dam are lined to achieve a permeability of no less than 1 x 10-9 m/s to a depth of at least 900 millimetres of clay (or equivalent); and	The leachate management system ponds are lined with 2 mm HDPE. The QA reports associated with the construction of the ponds does not certify the permeability of the liners. Finding: Not Verified.	Obtain a copy of the relevant engineering report certifying the permeability of the pond liners.	**Administrative non-compliance**
S3.25	The Proponent shall prepare and implement a Water Management Plan. The plan must be prepared by suitably qualified and experienced persons whose appointment has been approved by the Secretary,	DPIE endorsed the appointment of three experts to prepare the original plan on 31st August 2012. Correspondence from DPE approving the appointment of the authors of the 2016 or 2018 plan revisions was not sighted during the Audit. Finding: NOT VERIFIED	Request approval from DPIE for the appointment of the experts responsible for the (yet to be approved) 2019 Water Management Plan.	**Administrative non-compliance**
	and submitted to the Secretary for approval within six months of this approval, or prior to commencement of mining operations under this approval, whichever is sooner;	Correspondence verifying that the original plan was submitted to DPE / DPI was not sighted during the Audit. Finding: NOT VERIFIED	Ensure that the current version of the Water Management Plan is approved by DPIE.	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
S3.29	Within 6 months of approval and prior to the commencement of vegetation clearing on the site under this approval, the Proponent shall submit a Biodiversity Management Plan for the project site to the Secretary for approval. This plan must:	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in continuing delays in the finalisation of the plan.	Seek DIPE Approval for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.	**Administrative non-compliance**
S3.35	Within 6 months of the date of this approval, the Proponent shall: (a) commission a suitably qualified independent expert, whose appointment has been approved by the Secretary, to undertake a review of the existing traffic control devices on Burthong Road and Priory Tank Road, which: (i) reviews all existing traffic devices, including traffic signs, traffic signals, pavement markings, guide posts, delineators and safety barriers, and identifies any deficiencies; and (ii) recommends appropriate upgrades in accordance with the applicable AUSTROADS standards; (b) install traffic control devices in accordance with the recommendations of the review in (a), to the satisfaction of CSC.	Hera commissioned the required report and funded the installation of the required traffic controls. Installation of traffic control devices in accordance with the recommendations of the review in paragraph (a) had not been completed within 6 months of the date of the Project Approval.	This is an historical non-compliance. The works have been completed. No further action required.	**Administrative non-compliance**
S3.35A	Prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, or an alternative date nominated by BSC and CSC (with respect to the works within the relevant local government area), the Proponent shall implement, or contribute to the cost of implementing the recommendations in the report titled Visual Review of Traffic Control Devices – Hera Mine to Hermidale Siding prepared by	The recommendations in the Geolyse report dated 7 May 2014 had not been implemented prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road in October 2014.	This is an historical non-compliance. The works have been completed. No further action required.	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
	Geolyse Pty Ltd and dated 7 May 2014, to the satisfaction of BSC and CSC.			
S3.38	The Proponent shall prepare and implement a Traffic Management Plan. The Plan must: (a) focus on traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale;	The Traffic Management Plan does not clearly address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	Ensure that the latest revision of the Traffic Management Plan addresses traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	**Administrative non-compliance**
S3.40	The Proponent shall prepare a Final Hazards Analysis (FHA) for the project to the satisfaction of the Secretary, in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.	The September 2016 IER found that a Final Hazards Analysis (FHA) had not been completed. The recommendation to complete a final hazard analysis has not been actioned. A Preliminary Hazard Analysis (PHA) was completed by RW Corkery & Co as part of the EA (Nov. 2011) (sighted). Section 5.1 of the Hazardous Materials Management Plan states that "As there are no changes to the design of the Mine, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Condition 3(40) of Project Approval whereby a Final Hazards Analysis was to be prepared". The previous audit in July 2013 noted: "As the Hazardous Materials Management Plan has been approved by the Director-General, YTC Hera is compliant with this condition." However, the 2013 audit was conducted prior to the construction and operation of the processing plant; an area where the majority of the hazardous materials are stored or used. At the time of the audit in September 2016, it was observed that there are	Conduct a Final Hazard Analysis on the complete operation, in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
		hazardous goods (e.g. LNG Class 2.1) and processes (e.g. Meta Foundries – gold room) that were not identified in the original PHA.		
3.41	The Proponent shall prepare and implement a Hazardous Materials Management. The plan must: (a) be prepared in consultation with the relevant government agencies including CSC, RMS, EPA, DPI Water, WorkCover NSW and DRE;	No correspondence was available to verify that the EPA, DPI Water, DRE, CSC, RMS, or Workcover were consulted during preparation of the Plan.	Finalise the review and agency consultation for the 2019 Hazardous Materials Management Plan.	**Administrative non-compliance**
	(d) describe the measures that would be implemented to: (i) ensure sodium cyanide and other toxic chemicals are stored and handled on the site in accordance with AS/NZ 4452 – The Storage and Handling of Toxic Substances; and (ii) ensure the transportation of hazardous materials to or from the site is undertaken in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection and the Australian Code for the Transport of Dangerous Goods by Road and Rail – current version; and	The HMMP does not satisfy paragraph (d)(i) in that it does not specify measures in relation to the storing and handling of lead nitrate (and toxic chemical). The plan does not satisfy paragraph (d)(ii) in that it does not describe the route selection for the transportation of cyanide from its point of origin to the mine in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection.	Finalise the review and agency consultation for the 2019 Hazardous Materials Management Plan and ensure it includes the relevant requirements of AS 4452.	**Administrative non-compliance**
	(e) detail the emergency procedures for the Project consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	The HMMP does not satisfy paragraph (e) of this condition in that it does not include all of the procedures contained in the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	Finalise the review and agency consultation for the 2019 Hazardous Materials Management Plan and ensure it includes the relevant	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
			requirements of Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	
S3.43	The Proponent shall prepare and implement a Waste Rock Management Plan. The plan must: (b) submitted for the approval of the Secretary within six months of this approval;	DPE approved the Waste Rock Management Plan in July 2013. The WRMP had not been prepared and submitted for the approval of the Secretary within six months of this Project Approval (audit interview).	Finalise the stake holder consultation and review the 2019 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	**Administrative non-compliance**
	(d) reflect the groundwater and surface water monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation (covering monitoring methods, trigger levels and proposed management actions);	Section 4.3.2.1 in the WRMP describes the monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation. Specific visual levels trigger proposed management actions such as pumping to the process water dam. Trigger levels for acid detection (e.g. pH levels) have not been included in the WRMP.	Finalise the stake holder consultation and review the 2019 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	**Administrative non-compliance**
	(e) ensure effective isolation of potential acid forming material in rock dumps;	Measures to effectively isolate potential acid forming material in rock dumps is described in section 4.3.3 of the WRMP. However, it was stated that both PAF and NAF are stockpiled in Cell 1 (PAF) which is contrary to Table 5 and the material handling flowsheet in Figure 3 of the WRMP. Risk is created when using this material as differentiation between NAF and PAF relies on visual inspection. There is a risk where PAF, instead	Finalise the stake holder consultation and review the 2019 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
		of NAF, is used for other works on site (which has occurred on one occasion when PAF was used to construct a clean water drain; it was retrieved on the same day and self-reported) (audit interview and observation).	for the Plan.	
S3.46	The Proponent shall prepare and implement a Rehabilitation Management Plan. The plan must: (a) be prepared in consultation with the Department, OEH, EPA, DPI Water and CSC;	CSC has not been consulted during the preparation of the MOP (and therefore the rehabilitation action plan. The most recent version of the MOP / rehab management plan (submitted for approval on 6 Feb 2020) has been prepared in consultation with these agencies.	No action required.	**Administrative non-compliance**
S5.1	The Proponent shall prepare and implement an Environmental Management Strategy. The Strategy must: (a) be submitted to the Director-General for approval prior to the commencement of Mining activities;	While the first version of the EMS was approved by DPE, the current version has not been reviewed and approved by the Department. The Auditor has been advised that only the version number / date has been changed (i.e. that the plan was not changed).	Advise DPIE that the EMS has been reviewed and that no changes have been made to the document, but that the revision number and issue date have been updated.	**Administrative non-compliance**
	(b) provide the strategic framework for environmental management of the project;	The EMS provides a simple framework for the management of the environmental obligations associated with the Project. The framework presented in the EMS is based on ISO 14001. The framework as implemented is not sufficient to adequately manage Hera's compliance obligations under this Approval.	Implement the Environmental Management System Recommendations described in Section 7.1 of this report.	**Administrative non-compliance**
S5.3	The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include: (b) a description of: · the relevant statutory requirements (including any relevant approval, license or lease conditions); · any relevant limits or performance	With the exception of the MOP, EMS and TMP, current versions of the Plans (that is those that were approved by DPE and uploaded to the mine website at the time of the audit) were prepared in 2012/13. Variations to the Project Approval had been approved during that time and those modifications are in general not fully reflected in most of the plans. The Auditor has been advised that those plans have	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to reflect changes in the approval, legislative changes and	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
	measures/criteria; and · the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;	now been revised the consultation / approval of those plans has commenced.	developments in environmental management standards applicable to gold mining operations.	
	(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	The plans in general do not provide a program to investigate and implement ways to improve the environmental performance of the project over time.	During the review and revision of each plan required under this Approval, develop a program to investigate and implement ways to improve the environmental performance of the project over time.	**Administrative non-compliance**
S5.4	By the end of December each year, the Proponent shall review the environmental performance of the project. The Review must: (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	The Annual Reviews submitted for 2016, 2017 and 2018 did not clearly identify all non-compliances against the emission / performance criteria specified in the Project Approval and the Environment Protection Licence. For example, Section 4.3 of the 2017/18 Environmental Review states "There were several WAD Cyanide incidents during the reporting period". The non-compliances were not specifically identified, nor was there any discussion of actions taken by Hera in response to the non-compliances.	Provide full details of all non-compliances against both the Planning Approval and EPL in the Annual Review. Provide details of actions taken in relation to each non-compliance.	**Administrative non-compliance**
S5.5	Within 3 months of: (a) the submission of an annual review under condition 3 above; (b) the submission of an incident report under condition 5 below; (c) the submission of an audit report under	While there are a number of draft management plans, it appears that, generally, the 2012 / 13 plans are the current version in use. The review and revision of all management plans required under this Approval is overdue.	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to	**Administrative non-compliance**

No.	Condition	Observation	Recommendation	Risk Level
	condition 8 below; and (d) any modifications to this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.		reflect changes in the approval, legislative changes and developments in environmental management standards applicable to gold mining operations.	
S5.11	Prior to the commencement of construction on the site, the Proponent shall: (a) make copies of the following publicly available on its website: (i) the documents referred to in condition 2 of Schedule 2; (ii) all relevant statutory approvals for the project; (iii) all approved strategies, plans and programs required under the conditions of this approval;	The documents and records required by this Condition have been uploaded to the Hera website, except for the Mining Operations Plan (note that the appendices to that plan have been uploaded.	Ensure that all required plans (including the current version of the MOP) are loaded on the corporate website.	**Administrative non-compliance**
ENVIRONMENTAL PROTECTION LICENCE 20179				
L2.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	The 2016/7 Annual review reported that two discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharges occurred on 20 July 2016 and 16 December 2016 and were reported to the DPE, EPA and DRE.	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	**Medium**
L2.4	Water and/or Land Concentration Limits (refer to Tables in Condition L2.4)	During the 2019 reporting year on 3 occasions the cyanide destruction circuit failed and cyanide exceeding the licence limit of 10mg/l was discharged to the process water ponds. During the 2018 reporting year concentrations of weak acid dissociable (WAD) cyanide in discharges from Licence Point 1 and Licence Point 2 exceeded	Review the investigations relating to the WAD Cyanide non-compliances to determine if there are systemic issues in relation to cyanide level management in the process water system.	**Medium**

No.	Condition	Observation	Recommendation	Risk Level
		limits on several occasions. During the 2017 reporting year there were two non-complaint discharges from Point 3. Water quality concentration limit exceedances following heavy storm event. Pumps were set up to empty the sediment basin to reduce the amount of water discharged.		
O3.0	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises. All dust control equipment must be operable at all times with the exception of shutdowns required for maintenance. Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.	**Low**
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns: (table on page 10).	2018/19: On 5 occasions testing for Weak Acid Dissociable (WAD) Cyanide within the detox circuit when discharging to the tailings storage facility, was not undertaken. 2017/18: Licence Points 1 and 2 were not sampled during daily discharge. Sample Point 27 were not tested quarterly for electrical conductivity	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	**Medium**
M2.3	Refer to Discharge Limit Tables in Condition M2.3 of the EPL.	2018/19: On 5 occasions testing for Weak Acid Dissociable (WAD) Cyanide within the detox circuit when discharging to the tailings storage facility, was	Prepare a document that details all environmental	**Medium**

No.	Condition	Observation	Recommendation	Risk Level
		not undertaken.	monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period.	The 2016/7 Annual Return was received by the EPA on 17 May 2019 (61 days after the end of the reporting period). The 2017/8 and 2018/9 Annual Returns were received within 60 days of the end of the reporting periods.	Ensure that the Annual Returns are received by the EPA within the 60-day period required by the EPL.	**Administrative non-compliance**
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred. Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA. Notifications (incident reports) were provided to the EPA on: - 4 January 2017 (incident 16 December 2016) sediment laden discharge during storm event from Point 3. The incident was reported on 4 January 2017. The delay in reporting related to the time required for off-site sample analysis.	Hera has submitted the required incident reports to the EPA, however due to delays, usually associated with lab testing, the 7-day reporting requirement has not been met. It is recommended that Hera request a modification to this EPL condition to modify the 7-day written report requirement to provide sufficient time for lab analysis to be completed.	**Administrative non-compliance**
MINING LEASE 1686				

No.	Condition	Observation	Recommendation	Risk Level
2(a)	The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any activities under this lease.	As a result of two (self-reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	The clean-up actions relating to the incidents have been completed - there are no further actions required.	**Medium**

7. Independent Audit Post Approval Requirements

This audit focused on the pre-operational compliance requirements established by the Conditions of Approval. While the scope of the audit, as specified in the Conditions of Consent do not refer specifically to the DPIE Independent Audit Post Approval Requirements (DPIE, June 2018), for completeness the Audit has, where possible made an assessment of the environmental performance of the project.

7.1 Project Environmental Management System

During the audit forty-two environmental non-compliances were identified. The range of non-compliances suggests that full implementation of the Environmental Management Plan and therefore the relevant environmental elements of the Hera Business Management System have not been consistent. The Auditor reviewed the systems in place to manage environmental compliance at the mine and the following general observations were made:

- Hera does not operate under a formal, documented (ISO 14001 compliant) Environmental Management System (EMS).
- A computer based environmental record keeping system (INX database) is utilised.
- Environmental records are maintained by the Environmental Advisor on site server file system (O: Drive). However, some historical environmental compliance records were not able to be located during the audit.
- In general compliance requirements are communicated to operational personnel through toolbox sessions. There is no formal “environmental awareness training provided to operational personnel. Environment is mentioned in the surface work induction. The environmental content of the induction is modest and does not, except for spill management mention responsibilities (for either management, supervisors or staff / contractors). It mentions that all plans need to be adhered to but gives no actual guidance.
- Documented operational procedures exist, however there are very few environmental management procedures in place.
- Effective signage is used around the site, for example to show workers where to disposed of wastes.
- A centralised incident register has not been developed, however records of incidents were saved on the O: Drive. A standard incident reporting form has met been developed (but could be reported via on-line safety management system).
- The Hera JSEA that is used at Hera does not cover environment specifically.

The site employs a full-time environmental advisor who is supported by the Group Manager - Environment. While the General Manager understands the need for effective environmental management and is supportive, the responsibility for day to day environmental management falls to the environmental advisor. If the environmental advisor identifies an issue, that issue is addressed. However, the general level of environmental awareness across operational personnel is limited and as there is limited environmental related procedural documentation, and therefore, the potential for non-compliances remains.

It is therefore recommended that Hera develop and implement, as an integral part of the Business Management System, a formal, documented environmental system covering for example:

- Establishment of environmental objectives and targets,
- Environmental hazard and risk identification.
- Environmental procedures, including spill management (where appropriate these should be integrated into the existing operational procedures.

- The identification of environmentally related roles and responsibilities that would be integrated into existing role / responsibility documentation.
- Centralised incident (including complaints) register and standarised incident reporting and investigation forms and procedure.
- Environmental checklists and internal reporting processes.
- Environmental Awareness and Training needs.
- Environmental Record keeping requirements (including record retention policy).

7.2 Implementation of the Operational Environmental Management Plan and Sub-plans

The Conditions of Approval required the preparation and implementation of the following management plans:

1. Aboriginal Cultural Heritage Management Plan.
2. Air Quality and Greenhouse Gas Management Plan.
3. Blast Management Plan.
4. Biodiversity Management Plan, that includes the Biodiversity Off-set Strategy.
5. Environment Management Strategy.
6. Hazardous Materials Management Plan.
7. Mine Operations Plan.
8. Traffic Management Plan.
9. Waste Rock Management Plan.
10. Water Management Plan.

During the document review phase of the project the contents of each of the plans was reviewed. Most plans were prepared in 2012 and 2013 and are now dated and should be thoroughly reviewed and revised to ensure that the contents are up to date and meet all of the requirements of the Project Approval. In addition, the revision tables in the existing plans are not consistent and the Audit suspects that some of the version tables are not accurate.

7.3 Status of Previous IEA Findings

The previous audit was completed in September 2016. Table 6 lists each non-compliance identified during the 2016 Audit and the status of those non-compliance. Of the fifty-eight non-compliances recorded in the 2016 Independent Environmental Audit, forty-six have been actioned and closed, while twelve remain open. Note that those outstanding non-compliances are included in the detailed compliance table presented in Appendix B.

Table 6 - Status of 2016 Audit Findings

Condition	Detail	Status	Auditor Comments
Planning Approval 10_0191 (Consolidated**)**			
Schedule 2 Condition 2	Terms of Approval – Stockpile Heights - Based on the survey and visual inspection by the auditor, the height of the Waste Rock Emplacement (WRE) above the original hill slope exceeded the indicative height of 10 metres referred to in the EA.	**OPEN**	The most recent survey (3 May 2019) identified that the stockpile height again exceeded the 10m limit.
Schedule 2 Condition 7	Limits on Approval - Hours of Operation- Minor Non-compliance: Hera identified some instances of non-compliance in relation to the transportation times for concentrate trucks (refer to letters of 4 August 2016 from Aurelia to the DPE and RMS).	CLOSED	Original issue was a misunderstanding of the conditions, this was dealt with in communications with transport company and the Drivers code of conduct. One instance occurred during the Audit Period (2017). The requirement is now covered in Drivers Code of Conduct.
Schedule 2 Condition 8	Structural Adequacy - Minor Non-compliance: Occupation Certificates for Construction Certificates 17.2/2014, 17.3/2014 and 379/2013 (part) were not able to be produced at the time of this audit in September 2016.	CLOSED	The outstanding certificates have been provided during this audit.
Schedule 2 Condition 11	Operation of Plant and Equipment - Minor Non-compliance (historical): A cyanide spillage incident in September 2014 (Incident Report 000379 of 27 September 2014 relating to a leaking sump in Area 50-55 which allowed cyanide tainted water to escape the bund) resulted in a clean-up notice from the EPA (health and safety).	CLOSED	No cyanide spills have occurred since the 2014 spill. The cleanup required under the EPA cleanup notice was completed.
Schedule 2 Condition 15	Road Maintenance Contributions - Potential Non-compliance: A payment advice of $10,000 for a Bogan Shire Council (BSC) tax invoice dated 30/6/2015 was sighted. However, the reason for the payment could not be verified. Compliance with this condition could not be verified.	CLOSED	The Nymagee – Hermidale Road was fully sealed by mid-2018. Contributions after that time are no longer required under this Condition. Records of payment of the contribution (email from Bogan Shire Council) confirm that the require payment have been made.

Condition	Detail	Status	Auditor Comments
Schedule 3 Condition 12	Air Quality and Greenhouse Gas - Air Quality Criteria - (historical): Raw depositional dust data (Excel spreadsheet Data Summary DDG) for the audit period (July 2013 to September 2016) was reviewed. Eleven exceedances of the 4 g/m2/month deposition rate criteria for insoluble solids were recorded. There appeared to be no recording of dust deposition compared to the Maximum increase in deposited dust level criteria of 2 g/m2/month.	n/a	This reported non-compliance does not correlate with the finding in the main compliance table in the 2016 Audit Report entry for this condition.
Schedule 3 Condition 14	Air Quality and Greenhouse Gas - Potential Non-compliance: There was no evidence of documented procedures to address paragraph (c) of this condition. For example, the AQGGMP does not describe specific measures to be taken or SWis to be followed to minimise the air quality impacts of the project during adverse weather conditions and extraordinary events.	**OPEN**	AQGCMP has been revised but has not be submitted for approval. With the approval of Mod 5, the revised plans will be submitted.
Schedule 3 Condition 18	Soil and Water - Water Discharges - Non-compliance: Three surface water discharges from the sediment basin (SB1), which exceeded the EPL quality parameters (for License Point 3), have occurred in the 12 months prior to this audit. The discharges occurred on the 1-2/11/2015 (incident report 581 sighted), 9/05/2016 (incident report 645 sighted) and 20/07/2016 (incident report 669 sighted).	CLOSED	The sedimentation basin has been expanded. See EPL documentation letter 17609 (EPL E1.1/ E1 Special Conditions/2017). Plus, letter in EPL E1.1/2017 letter report from EMM)
Schedule 3 Condition 19	Soil and Water - Water Discharges Exceedances of the 10 mg/1 WAD occurred on consecutive days from the 4-9/05/2015. Another exceedance occurred on the 20-21 /06/15 (incident reported 000531 sighted as well as email notifying relevant authorities). It was stated that a failsafe system was introduced in the processing plant after last exceedances in 2015 which prevents the discharge of elevated WAD solutions in the event the cyanide destruct process fails. A closed incident report was sighted, however, there was no evidence that recommendations had been undertaken and signed off.	**OPEN**	Further non-compliances have been occurred during the current audit period. There have been several suspected causes to the continued exceedances. The limit set the PA and EPL is very low (WAD 10mg / l). This is not consistent with the Cyanide Code WAD limit of 50 mg/l). *The Auditor recommends that Hera seeks to have the PA and EPL modified to meet the standard set in the Cyanide Code.*
Schedule 3 Condition 20	Soil and Water- Water Discharges - At the time of this audit in September 2016 Hera was non-compliant with this condition in the following respects: 1. An exceedance of the 20 mg/1 WAD occurred on consecutive days from the 4-7/05/2015 (incident reported 000503 sighted as well as email notifying relevant authorities). Preliminary findings indicated that there was a flaw in the control system that could allow barren solution to be discharged to the process water dam. There was no evidence that recommendations had been undertaken and	**OPEN**	Further non-compliances have been occurred during the current audit period. There have been several suspected causes to the continued exceedances. The limit set the PA and EPL is very low (WAD 10mg / l). This is not consistent with the Cyanide Code WAD limit of 50 mg/l). *The Auditor recommends that Hera seeks to have the PA and EPL modified to meet the standard set in the Cyanide Code.*

Condition	Detail	Status	Auditor Comments
	signed off. 2. Up until the time of this audit in September 2016, an incorrect sampling point had been utilised (i.e. the process water dam instead of the discharge point of the thickener overflow to the process water dam).		
Schedule 3 Condition 22	Soil and Water - Design and Permeability of Storages – Partial Non-compliance: In relation to paragraph (a) of this condition it was noted the process water dam and leachate management pond were lined with HDPE. A subcontractor's warranty (for the HOPE installation) dated 25 August 2013 was sighted, however, at the time of this audit in September 2016 there was no evidence of permeability testing having been undertaken for either structure (e.g. HOPE weld quality control results).	**OPEN**	The leachate management system ponds are lined with 2 mm HDPE. The QA reports associated with the construction of the ponds does not certify the permeability of the liners.
Schedule 3 Condition 23	Soil and Water- - Design and Permeability of Storages – Partial Non-compliance: No evidence was available at the time of this audit in September 2016 to verify that the construction met the design requirements to prevent the probable maximum flood from the catchment upstream of the facility from entering the facility.	CLOSED	A freeboard of at least 200mm is to be achieved as a minimum operational condition allowing capacity to capture the 100-year 72-hour design rainfall event (GHD: July 2016: Water Management Plan). Currently the process water dam height set point is controlled at 80%.
Schedule 3 Condition 24	Soil and Water- Design and Permeability of Storages- It could not be verified that the height set control level of 80% relates to a freeboard of 200mm.	**CLOSED**	Alarm set at 90%, pond marker showing 300mm free board has been installed.
Schedule 3 Condition 25	Soil and Water - Water Management Plan –There is no evidence of the WMP having been submitted to the DPE within the required six-month timeframe (or at all). In addition, in relation to paragraph (a) of this condition there was no evidence that comparisons of the site water balance for each calendar year are included in reporting.	**OPEN**	Correspondence verifying that the original plan was submitted to DPE / DPI was not sighted during the Audit.
Schedule 3 Condition 26	Biodiversity - Biodiversity Offset Strategy - At the time of this audit in September 2016 a Biodiversity Offset Strategy for the project had not been prepared to the satisfaction of the Secretary.	**OPEN**	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.
Schedule 3 Condition 27	Biodiversity - Biodiversity Offset Strategy – At the time of this audit in September 2016 the draft Biodiversity Offset Strategy had not been approved by the Secretary despite the deadline of 31 July 2016 in Condition 26 of this Schedule. Therefore, satisfactory implementation of a Biodiversity Offset Strategy has potentially been delayed.	**OPEN**	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.
Schedule 3	Biodiversity- Long Term Security- Potential Non-compliance: At the	Not	The biodiversity plan has not yet been approved.

Condition	Detail	Status	Auditor Comments
Condition 28	time of this audit in September 2016 the draft Biodiversity Offset Strategy had not been approved by the Secretary despite the deadline of 31 July 2016 in Condition 26 of this Schedule. Therefore, the making of suitable arrangements to conserve the offset area identified in the draft Biodiversity Offset Strategy in perpetuity has potentially been delayed.	Triggered	
Schedule 3 Condition 29	Biodiversity - Biodiversity Management Plan - Non-compliance: At the time of this audit in September 2016 a final Biodiversity Management Plan for the project had pot beep submitted to the Secretary for approval	**OPEN**	A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.
Schedule 3 Condition 30	Biodiversity - Biodiversity Management Plan – Potential Non-compliance: At the time of this audit in September 2016 the draft Biodiversity Offset Strategy had not been approved by the Secretary despite the deadline of 31 July 2016 in Condition 26 of this Schedule. Therefore, Hera's submission of an updated Biodiversity Management Plan to the Secretary has potentially been delayed beyond 31 January 2017 (i.e. 6 months after 31 July 2016).	Not Triggered	The biodiversity plan has not yet been approved.
Schedule 3 Condition 31	Biodiversity- Conservation Bond - Potential Non-compliance: At the time of this audit in September 2016 the final Biodiversity Management Plan had not been submitted to the Secretary for approval in accordance with Condition 29 of this Schedule. Therefore, lodgment of the required conservation bond with the DPE has potentially been delayed.	Not Triggered	The biodiversity plan has not yet been approved.
Schedule 3 Condition 34	Transport - Road Upgrades - Non-compliance (historical): Intersection design and pavement upgrades had not been undertaken in accordance with the recommendations of the review within 6 months of the date of the Project Approval.	CLOSED	Works have been completed
Schedule 3 Condition 35	Transport - Road Upgrades - Non-compliance (historical): Installation of traffic control devices in accordance with the recommendations of the review in paragraph (a) had not been completed within 6 months of the date of the Project Approval.	CLOSED	Works have been completed
Schedule 3 Condition 35A	Transport - Road Upgrades - Minor Non-compliance (historical): The recommendations in the Geolyse report dated 7 May 2014 had not been implemented prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road in October 2014.	CLOSED	Council hasn't requested money Council have written to Hera stating that this condition will not be relevant when Mod 5 is approved.
Schedule 3	Transport- Transport of Concentrate to Hermidale Rail Siding - Minor Non-compliance: The transport of concentrate to the Hermidale rail	CLOSED	Original issue was a misunderstanding of the conditions, this was dealt with in communications with transport company and the

Condition	Detail	Status	Auditor Comments
Condition 37A	siding via the Nymagee Hermidale Road was outside of daylight hours on 12 occasions during the period 30/06/2015- 20/06/16.		Drivers code of conduct. One instance occurred during the Audit Period (2017). The requirement is now covered in Drivers Code of Conduct.
Schedule 3 Condition 38	Transport - Traffic Management Plan - Non-compliance: At the time of this audit in September 2016 the Traffic Management Plan (TMP) had not been updated to include traffic management along Nymagee-Hermidale Road, and there was no evidence that it had been developed in consultation with both BSC and CSC or been submitted to the Secretary for approval prior to carrying out any development on the site.	CLOSED	Management plan and code of conduct were approved on the 14 November 2017. (refer letter from DPE and management plan sent by email today. Evidence of consultation with Council was sighted. NOTE IS A NON-COMPLIANCE AGAINST CONDITION 38 (c)
Schedule 3 Condition 40	Hazardous Materials - Final Hazard Analysis - At the time of this audit in September 2016 a Final Hazards Analysis (FHA) had not been completed.	**OPEN**	A Preliminary Hazard Analysis (PHA) was completed by RW Corkery & Co as part of the EA (Nov. 2011) (sighted). Section 5.1 of the Hazardous Materials Management Plan states that "As there are no changes to the design of the Mine, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Condition 3(40) of Project Approval whereby a Final Hazards Analysis was to be prepared". The previous audit in July 2013 noted: "As the Hazardous Materials Management Plan has been approved by the Director-General, YTC Hera is compliant with this condition." However, the 2013 audit was conducted prior to the construction and operation of the processing plant; an area where the majority of the hazardous materials are stored or used. At the time of the audit in September 2016, it was observed that there are hazardous goods (e.g. LNG Class 2.1) and processes (e.g. Meta Foundries – gold room) that were not identified in the original PHA.
Schedule 3 Condition 41	Hazardous Materials - Hazardous Materials Management Plan - At the time of this audit in September 2016 the current Hazardous Materials Management Plan (HMMP) (Revision 2 of 9 April 2013) had not been updated to include the observations from the previous July 2013 audit. The HMMP is non-compliant in several respects.	**OPEN**	The current version of the plan does not satisfy all of the requirements of this Condition.
Schedule 3 Condition 42	Waste - At the time of this audit in September 2016 the following issues were identified in relation to the Village Sewage System and the Office Sewage System. In relation to the Village Sewage System, a walkover of the area revealed effluent pooling underfoot in numerous areas, absence of warning signs and delineation and possible recreational use of the area by employees. In relation to the Office Sewage System, effluent runoff was observed at the disposal	CLOSED	Signage sighted No effluent run-off observed. Council construction certificate (emailed) saying designed in accordance with Australian Standards were sighted.

Condition	Detail	Status	Auditor Comments
	area in front of the offices and pending was evident in the spray irrigation area.		
Schedule 3 Condition 43	Waste - Waste Rock Management Plan - The WRMP does not comply with paragraphs (b), (c), (d), (e) and (k) of this condition.	**OPEN**	The current version of the plan does not satisfy all of the requirements of this Condition.
Schedule 3 Condition 44	Rehabilitation - Condition 44- Rehabilitation Objectives - Non-compliance: The rehabilitation objectives in section 4.3.4 of the RMP do not correspond with the objectives in Table 7 of this condition. For example, the RMP does not address the third dot point in the Mine Site (as a whole) feature of Table 7.	Closed	A plan was prepared in 2013, but the regulator has agreed that the MOP can be used as the rehab plan. The 2013 plan has therefore been superseded.
Schedule 3 Condition 46	Rehabilitation - Rehabilitation Management Plan - Partial Noncompliance: The RMP does not comply with paragraphs (b), (d) and (g) of this condition.	Closed	The current version of the plan satisfies the content requirements of this Condition.
Schedule 4 Condition 2	Notification of Landowners - For the period between the compliance audit in July 2013 and December 2014 (when Hera's current Environmental Officer commenced employment), it could not be verified that Hera notified or sent information to affected landholders and tenants under this condition when exceedances occurred (for example, the historical non-compliance for dust deposition referred to in Schedule 3 Condition 12).	Closed	No reports have been made to any landowner during this reporting period. No dust incidents have impacted any residents during this audit period. From 2018 no residents were notified of specific exceedances because of wind direction.
Schedule 5 Condition 1	Environmental Management Strategy- Partial Non-compliance: Section 5.2 of the strategy includes a list of strategies, plans and programs approved under the conditions of this approval; however, the plans are not included in the strategy document.	Closed	All plans are loaded onto the company website.
Schedule 5 Condition 3	Management Plan Requirements - The Management Plans referred to below do not comply with the paragraphs (a) and (g) of this condition.	**OPEN**	RMP has been reviewed (that is now the MOP). The current version of the plan does not satisfy all of the requirements of this Condition.
Schedule 5 Condition 5	Revision of Strategies Plans and Programs - Reviews are not being undertaken within three months of the submission of an Annual Review.	**OPEN**	Plans have not been reviewed and updated (and subsequently approved by Planning
Schedule 5 Condition 6	Community Consultative Committee - Non-compliance (historical): The first meeting of the CCC was held on Thursday 14 February 2013 at the Hera Mine, which was just outside the 6-month timeframe after the Project Approval of 31 July 2012.	CLOSED	No actions. CCC is operational
Schedule 5 Condition 7	Incident Reporting - Minor Non-compliance: As noted in relation to EPL Condition R2.2, Hera has not complied with the 7-day timeframe in relation to all reported incidents.	**OPEN**	Will be modified in Mod 5 to rectify the 7 days from incident to 7 days from becoming aware of the incident. This condition is not achievable because of the time frame for, for example the receipt

Condition	Detail	Status	Auditor Comments
			of lab data that could take more than a week to receive.
Schedule 5 Condition 8	Regular Reporting - Minor Non-compliance: The most recent AEMR (from 16 May 2015 to 15 May 2016) is not Aurelia's website at the time of this audit in September 2016. The link on Aurelia's website to	CLOSED	Is now on the website.
Schedule 5 Condition 11	Access to Information - Hera has not complied with aspects of sub-paragraphs (iii), (vi) and (vii) in paragraph (a) of this condition.	**OPEN**	The documents and records required by this Condition have been uploaded to the Hera website, except for the Mining Operations Plan (note that the appendices to that plan have been uploaded.
Environment Protection License 20179			
L2.1	Since the previous compliance audit in July 2013 three of the four points in the Table for Condition L2.4 have recorded exceedances.	**OPEN**	The 2016/7 Annual review reported that two discharges from License Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharges occurred on 20 July 2016 and 16 December 2016 and were reported to the DPE, EPA and DRE.
L 4.6	Noise monitoring is being conducted closer to the Hera Mine than the R1, R2, R3 and R4 locations.	CLOSED	The sampling locations and sampling procedures used by Hera's noise consultants meet the requirements of the EPL.
L4.8	The modification factors in Section 4 of the NSW Industrial Noise Policy may not have been applied to data in the Monthly Noise Monitoring spreadsheet since March 2014.	CLOSED	From 2017 noise consultant has been commissioned. EMM have undertaken the monitoring in accordance with this Condition.
O1.1	(historical): A cyanide spillage incident in September 2014 (Incident Report 000379 of 27 September 2014 relating to a leaking sump in Area 50-55 which allowed cyanide tainted water to escape the bund) resulted in a clean-up notice from the EPA (health and safety).	CLOSED	Investigated and closed out.
02,1	Minor Non-compliance (historical): A cyanide spillage incident in September 2014 (Incident Report 000379 of 27 September 2014 relating to a leaking sump in Area 50-55 which allowed cyanide tainted water to escape the bund) resulted in a clean-up notice from the EPA (health and safety).	CLOSED	Investigated and closed out.
04.1	At the time of this audit in September 2016 Hera was non-compliant with this condition in the following respects: 1. Hera could not verify that the cyanide plant bunding had been built to the AS4452: 1997 as per the design. 2. No bunding was observed in the (uncovered) concentrate loading area to ensure any concentrate spillage was returned via a sump to the process or to prevent any concentrate runoff to the surrounding environment.	CLOSED	Section 5.8 of the HMMP lists the cyanide controls to be used which are consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Code).

Condition	Detail	Status	Auditor Comments
M2.1	The interval between testing at point 24 (13 November 2014 and 20 January 2016) exceeded the yearly frequency required under this condition and EPL Condition M2.2.	CLOSED	The sampling is done annually in accordance with this condition
M2.2	The interval between testing at point 24 (13 November 2014 and 20 January 2016) exceeded the yearly frequency required under this condition and EPL Condition M2.1.	CLOSED	The sampling is done annually in accordance with this condition
M2.3	At the time of this audit in September 2016 the WAD sample for Point 2 (discharge to Process Water Dam (WQTP1)) has been incorrectly sampled from the PWD instead of the discharge point to the PWD.	CLOSED	Samples now taken from the pipe (the discharge point)
R1.5	Hera was unable to produce eConnect EPA or registered post receipts for the submission of signed original copies of the Annual Return, supplied to the EPA for any of the reporting periods.	CLOSED	EPL Reports are now all submitted on-line. The EPA's Public Register lists the submission date of all reports
R2.1	(historical): At the time of this audit in September 2016, no evidence was available of any earlier notifications to the Environment Line service.	CLOSED	All incidents are now reported to the EPA Pollution Line.
R2.2	Written details of four incidents were not notified to the EPA within the required period of 7 days.	**OPEN**	Notifications (incident reports) were provided to the EPA on: - 4 January 2017 (incident 16 December 2016) sediment laden discharge during storm event from Point 3. The incident was reported on 4 January 2017. The delay in reporting related to the time required for off-site sample analysis.
R3.1	It could not be verified during this audit of September 2016 that Hera sent the validation report (Hera Project, Effectiveness of Clean-Up Report Stage 2 and 3, Electrical Conduit and Bund 50 Area) dated 27 October 2014 to the EPA b the EPA's deadline of COB 6 November 2014.	CLOSED	EPA issued a caution notice that closes out this issue – review (emailed) and the EPA has accepted that the cleanup was done and validated.
G2.1	Hera was not able to demonstrate that each monitoring and discharge point was marked by a sign that indicates the EPA point identification number.	CLOSED	An inspection during the audit checked 10 points and all were labelled.
U2.1 Pollution Studies	Rehabilitation Plan - Minor Non-compliance: Hera's proposal does not address various requirements of this condition.	CLOSED	These PRP requirements were removed from the license by the EPA.
Mining Lease ML1686			
1	(historical): Although Hera Resources Pty Ltd is a wholly owned subsidiary of Aurelia Metals Limited, a literal reading of this condition required Hera to have served a notice in writing on Aurelia regarding	CLOSED	The previous auditor's finding was incorrect. The intent of this condition relates to landholders other than the proponent.

Condition	Detail	Status	Auditor Comments
	the grant of the lease.		
2	As noted in relation to Conditions R3.1, R3.2 and R3.3 of the EPL, since the previous audit in July 2013 there has been an incident which could have caused harm to the environment.	CLOSED	Check EPL licence condition finding
3	The current approved MOP does not include the area approved for mining operations in Project Approval MOD 3. The carrying out of mining operations in the MOD 3 approved disturbed area would mean Hera is non-compliant with the current approved MOP, which limits mining operations to the DRE approved area.	CLOSED	Actions related to the incidents reported have been closed out.
5	Hera's incident report form does not have a field to record any actions that have, or will be, taken to prevent similar incidents from occurring in the future. Incident Report 000379 refers to a detailed investigation report, which may or may not contain this information.	CLOSED	The Auditor has reviewed the reported environmental incidents and licence exceedances (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates that all exceedances were reported to DPE, DRE, EPA and where required to Council.

7.4 Specialist Auditor Reports

No specialist auditor reports were prepared as part of this audit.

7.5 Operational Environmental Impacts

The assessment of actual impacts against those predicted in the EIS, prepared by RW Corkery, titled "*Environmental Assessment Major Project Application No 10_0191*" dated November 2011, are provided in Table 7. The actual impacts of the operations are taken from the 2019 AEMR.

Table 7 - Predicted vs Actual Impacts

Category	Predicted Impact	Actual Impact
Fauna	Project Impacts on threatened species is unlikely to be significant.	Fauna observations have decreased over the past decade. This decline was not considered significant (as per the 2019 AEMR). An overall downward trend is visible in the total fauna species seen since 2010 however this was noted to be likely linked to a decline in rainfall since 2010 rather than an increase in disturbance.
Flora	The Project would disturb approximately 77ha of land within the Project Site. No significant environmental impacts to threatened species, communities or populations of flora or fauna, due to the Project would occur.	Flora results were less diverse than 2017 monitoring results at both Hera and Chelsea Property, which were in turn less diverse than the 2016 monitoring results. Annual differences in species diversity were mainly due to changes in the composition of lower stratum perennial and annual herbs, forbs and grasses. Upper and mid stratum species generally remain stable and change gradually over longer time periods than lower stratum species. A severe drought is believed to be the primary factor responsible for the reduced number of lower stratum species compared to previous years.
Groundwater	The Project has the potential to impact on standing water levels within a single non-Project related registered bore (GW017386).	Hera has commenced negotiations with the impacted landowner regarding the reduction on groundwater levels in their bore. No other groundwater issues were identified during the audit.
Surface Water	1. With the proposed sediment and erosion measures in place it is unlikely the Project would have the potential to adversely impact on the water quality of the receiving waters. 2. Negligible impacts associated with the final landform are envisaged since all created	1. No adverse impacts from sediment laden water have been detected from the mining operation. 2. No adverse impacts related to landform (ie significant erosion) were observed by the Auditor.

Category	Predicted Impact	Actual Impact
	landforms would be stabilised in accordance with Landcom (2004) requirements. 3. No adverse impacts associated with wastewater, generated within the Surface Facilities Area and the Mine Camp, would result since the wastewater would be treated appropriately and disposed of in designated irrigation areas. 4. There would be no offsite discharges of contaminated water because the processing water and tailings water would be contained within appropriately constructed areas and surface water (and groundwater) monitoring would identify any leakage early, enabling the issue to be rectified. 5. With the proposed mitigation measures in place it is concluded that the Project would not have a measurable detrimental impact on the surface water quality or quantity of the receiving waters downstream from the Project Site.	3. No adverse impacts from the disposal of camp and surface works sewage treatment have been detected. 4. No adverse impacts from the management of process waters have been detected. Note that exceedances with WAD Cyanide have been detected, however no adverse environmental impacts have been detected. 5. No adverse impacts from water discharges from the operations have been detected.
Noise and Blasting	1. The site establishment, operational and sleep disturbance predicted noise levels at the four nearest receivers are below the relevant criterion. 2. The peak vibration velocities and peak blast over pressures at the closest residential property will be well below the relevant criteria.	1. No noise exceedances have been detected over the last two audit periods. Therefore, the Auditor concludes the operational noise levels are generally in accordance with the predictions in the EIS. 2. The blasting assessment undertaken as part of the EA (Spectrum Acoustics, 2011) predicted that for receptor R3 (nearest receptor to the box cut) the peak vibration would be 0.1 mm/s. The majority of the blast vibration results (92%) were below this prediction. Additionally, Spectrum Acoustics (2011) predicted that for receptor R3 that the peak blast overpressure would be 105 dB. The majority of the blast overpressure results during the reporting period (99%) were below this prediction.
Aboriginal Heritage	Since no Aboriginal sites or objects were recorded during the EIA assessments and no area within the Project Site has been assessed as holding archaeological potential it has been concluded that there will be no impact to cultural heritage arising from the Project.	No aboriginal heritage impacts have been identified.

Category	Predicted Impact	Actual Impact
European Heritage	The Project is unlikely to impact upon any items of historical heritage significance.	No European heritage impacts have been identified.
Air Quality and Greenhouse Gas	1. The incremental and cumulative dust deposition levels as a result of the Project will satisfy the relevant criteria at all selected receptor locations. 2. The cumulative PM10 concentrations will be less than the applicable NSW criterion at all receptor locations. 3. The operation of the Project is expected to generate approximately 48 558t CO2-e annually (Scope 2 Emissions).	1. Dust deposition measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations. 2. PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations. 3. The 2017-2018 greenhouse gas emission data was comparable (within 5%) to the predictions made in the EA
Traffic and Transport	1. There would be adequate vehicle access and parking within the Project Site. 2. The proposed heavy vehicle transportation route is designated for road trains and the additional heavy vehicle traffic generated by the Project would not have an unacceptable impact upon the operation of the roads along that route.	1. Sufficient on-site parking has been provided. 2. No more than eight vehicle movements (entering and leaving the site) per day, averaged over a calendar month. The EIA modelling predicted up to 12 truck movements daily.
Soils	The impacts of the Project on the soils to be disturbed within the Project Site are considered to be insignificant.	No significant impact on soils has been identified.
Visual Amenity	The Project would not impact significantly on the visual amenity surrounding the Project Site.	The operations are not visible from any public road or private residence.
Bushfire	The Project is unlikely to increase the fire hazard rating of the Project Site and the surrounding areas.	No bushfires have started on the mine site.
Waste	1. It is unlikely that any potentially contaminating solid waste would enter the surrounding environment. 2. It is unlikely that any contamination of downstream local waterways, aquatic habitats and groundwater with hydrocarbons, litter and acid mine drainage would occur. 3. It is unlikely that any degradation of visual	1. There is no evidence that potentially contaminating materials have entered the surrounding environment. 2. There is no evidence that contamination of downstream waterways or other off-site locations has occurred. 3. No off-site litter was observed during the audit.

Category	Predicted Impact	Actual Impact
	amenity of the surrounding environment through litter dispersal from the Project Site and improper management of waste within the Project Site.	

Compliance Table

Appendix A

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S2.1	Terms of Approval	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any **material harm** to the environment that may result from the construction, operation or rehabilitation of the project.	1. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1580504, dated13 June 2019. 2. EPA Clean-up Notice 157818.			As a result of two (self reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	**Non-Compliance**	The clean-up actions relating to the incidents have been completed - there are no further actions required.
S2.2		The Proponent shall carry out the project generally in accordance with the: (a) EA; and (b) conditions of this approval.	1. Email from S.Heinrich (Senior Surveyor) to M Williams (Senior Environmental Advisor) titled "*Waste Pad Over Height"*, dated 3 May 2019. The email notified the Environmental Advisor that the survey of the stockpile had confirmed that the stockpile height had been exceeded.	1. J. Thompson 29 November 2019. An exceedance in stockpile height occurred in May 2019.	1. The stockpile is not visible from any adjacent properties or public roads.	During the Audit period, the Waste Rock stockpile height exceeded the 10m height limit. The Auditor notes that the proposed Modification 5 seeks to increase the Waste Rock stockpile height to 15m. It is the Auditor's view that an increase in stockpile height will not result in an additional impact on the environment.	**Non-Compliance**	Ensure that the waste rock dump height is maintained below the approved height.
S2.3		If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.					**Noted**	
S2.4		The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	1. Correspondence related to an exceedance of the bench heights of the tailing storage facility (in early 2016) and subsequent correspondence with DPE indicating that the issue had been dealt with. This correspondence related to an incident in 2016. No further records of directions from DPIE were identified.	1. J. Thompson 29 November 2019. No directions were received from DPIE during the audit period.		No directions for action (to be taken) were found relating to directions from DPE	**Not Triggered**	
S2.5	Mining Operations	The Proponent may carry out Mining operations on the site until 31 December 2022.				Administrative Statement	**Noted**	
S2.6	Ore Extraction and Processing	The Proponent shall not: (a) process more than 505,000 tonnes of ore from the site in any calendar year. (b) transport more than 50,000 tonnes of concentrate from the site in any calendar year.	1. Aurelia Metals Limited 2017 Annual Report 2. Aurelia Metals Limited 2018 Annual Report 3. Hera Annual Review 2019	1. J. Thompson 20 November 2019. The mine has not exceeded the ore processing or concentrate transport limits during the audit period.		The corporate annual reports and Annual Reviews provide a summary of production data for each year. These were: 2017 Financial Year: 368,086 tonnes of ore processed, 32,308 tonnes of concentrate transported from site. 2018 Year: 407,131 tonnes of ore processed, 40,756 tonnes of concentrate transported from site. 2019 Year: 468, 358 tonnes of ore processed, 31,206 tonnes of concentrate transported from site.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S2.7	Hours of Operation	The Proponent shall comply with the operating hours: (a) Vegetation Clearing: 7am to 6pm , 7 days a week (b) Construction: 24 hours, 7 days a week (c) Mining, maintenance and processing: 24 hours, 7 days a week (d) Rehabilitation: Day /Evening (e) Transportation of Concentrate and Gold Ore: 7am to 10pm , 7 days a week.	1. Letter to DPIE from J Thompson, dated 7 December 2017 notifying DPIE of two non-compliances: a) 29 September 2017 concentrate truck departed site at 0600 b) 28 November 2017 weak acid dissociable (WAD) cyanide discharge to the SF exceeded licence conditions 2. Driver Training and / or Induction Materials 3. Complaints Register (uploaded to the Hera website).	1.Interview J Thompson, 19 November 2019. Hera has complied with the operating hours specified in the Approval except for one instance where a concentrate truck departed the site prior to 7am. Specifically: • No significant vegetation clearing has occurred during the Audit Period • No construction works have been undertaken during the Audit Period • No rehabilitation works have been undertaken on any area of the site • Transportation of concentrate has be confined to daylight hours.		One non-compliance (concentrate truck departure at 0600) occurred during the Audit Period. No complaints relating to out of hours works (including truck movements to and from site) are recorded on the complaints register that has been uploaded to the Hera website. The Drivers Code of Conduct includes the requirement that no concentrate transport should occur outside of daylight hours (specifically 0700 to 1930).	**Non-Compliance**	No action required; the drivers code of conduct is up to date.
S2.8	Structural Adequacy	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	Plant and associated facilities Construction Certificates • CC 379/2013 issued 16 April 2013 • CC 20130148 issued 2 October 2013 • CC 17.2/2014 issued 20 March 2014 • CC 17.3/2014 issued 4 April 2014 Plant and associated facilities Occupation Certificates • OC 20130148 issued 28 January 2014 • OC 379.1/2013 issued 3 March 2014 • OC 17/2014 issued 6 July 2017 • OC 358/2017 issued 25 August 2017 Tailings Storage Facility • Tailings Storage Facility Design Report (MWP00768AA-AC Design Rep FS Rev0) • Dam Safety Committee TSF Surveillance Report Issued 14 April 2016 • Letter from Dam Safety Committee dated 16 July 2014 confirming acceptance of the Stage 1 Construction report for the TSF. Other • Johnson Explosives letter dated 27 August 2012 confirming compliance of the Explosives Magazine with AS2187.1 • Structural Condition Assessment (transportable Buildings) prepared by Geolyse, dated December 2017 • Building Certificate issued by CSC (related to office building and ablution blocks) dated 21 February 2018.	1. J. Thompson 20 November 2019. no new construction works have been undertaken during the audit period.		The present processing plant, workshops and associated office facilities were constructed prior to this Project Approval and were approved by the DPI in 2006 under Part 5 of the EP&A Act 1979. No new construction works were undertaken during the audit period. However the previous audit failed to cover approval of the TSF and therefore the Auditor has reassessed the compliance against this condition covering the current and previous Audit Periods. Note that the previous audit recorded a Non-Compliance against this condition. The review of the construction documentation undertaken during this audit has found that sufficient documentation has been retained by Hera to demonstrate that appropriate quality assurance measures were implemented during construction works and the required CCs and OCs have been obtained. Approval under the Dams Safety Act for the TSF have been obtained.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S2.9	Demolition	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	1. Records of demolition 2. Contracts / specifications for demolition works	1.Interview L. Richards, 19 November 2019. No demolition works were undertaken during the Audit Period. A decommissioned crusher is awaiting demolition.		No demolition works have been undertaken during the audit period.	**Not Triggered**	
S2.10	Protection of Public Infrastructure	The Proponent shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure damaged by the project; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure.	1. incident Register	1.Interview J Thompson, 19 November 2019. No requests have been received requesting repairs be made to any public infrastructure.		No instances of damage to public infrastructure have been identified for the Audit Period.	**Not Triggered**	
S2.11	Operation of Plant and Equipment	The Proponent shall ensure that all plant and equipment used at the site, or to transport extractive materials from the site, is:(a) maintained in a proper and efficient condition; and(b) operated in a proper and efficient manner.		Interview T. Cox Maintenance Supervisor: 1. Pronto (asset and facility management software) is used to plan and track routine maintenance of fixed and moving plant.2. Hera takes steps to ensure that all the plant and equipment used at the site is maintained in a proper and efficient condition. These steps include:• The mining contractor (PYBAR) is contracted to perform all mining vehicle plant maintenance functions on site and Hera maintains surface plant and equipment;• All equipment on site has to be MDG15 compliant (audit interview);• An equipment maintenance register (sighted for both Hera and PYBAR).• A maintenance schedule system is in place and current for plant (see above).• The concentrate transporter's (KPC Bulk) trucks are under a Maintenance Management system with the NHVR (National Heavy Vehicle Register) which requires them to be audited every twelve months.	1. Demonstration of Pronto software. The auditor witnessed the processes used to setup, manage and monitor fixed and mobile plant maintenance.2. Fixed and mobile plant sighted during the audit was operational and appropriately maintained.	The mine operates a popular maintenance management system. Maintenance records sighted (on the Pronto System) demonstrated that a comprehensive proactive maintenance program is in place.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S2.12	Staged Submission of Plans and Programs	With the approval of the Director-General, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis.	Correspondence from DPIE approving staging of any plans or programs	1.Interview L. Richards. There are no plans to submit any strategy, plan or program required by this approval on a progressive basis at this stage		This condition has not been triggered.	**Not Triggered**	
S2.13		Until they are replaced by an equivalent strategy, plan or program approved under this approval, the Proponent shall implement the existing strategies, plans or programs for the site that have been approved under the approved exploration activities described in Review of Environmental Effects entitled "Exploration Decline at the Hera Deposit within Exploration Licence 6162".	1. Review of Environmental Effects entitled "Exploration Decline at the Hera Deposit within Exploration Licence 6162".	The Environmental Management Strategy has been approved. The only plans that have not been approved since project inception are the Water Management Plan and Biodiversity Management Plan. The draft plans are substantially the same as the documents included in the REF. Therefore, Hera is operating in general accordance with the Review of Environmental Factors (REF) for the Exploration Decline.		The Environmental Management Strategy and related sub-plans required by this Approval have been drafted. All of the plans are not up to date and / or approved (by DPIE). The unapproved plans are being implemented as opposed to the plans provided in the REF. The management plans that are loaded onto the company website are assumed to be those that are current and being implemented. The majority of those plans were prepared in 2012/13 and may no longer provide up to date process information or mitigation measures relevant to the current operations. Each of the Plans has been reviewed by the Auditor and while generally technically sufficient contain some inaccurate information, for example regulatory references. The Auditor has been advised that the 2019 versions of the management plans have been reviewed and that consultation with the relevant regulators is underway.	**Non-Compliance**	Finalise the consultation and update of the 2019 versions of the management plans and then seek DPIE approval for the revised plans.
S2.14	Planning Agreement	By 31 July 2016 unless otherwise agreed by the Secretary, the Proponent shall amend the planning agreement with CSC, in accordance with Division 6 of Part 4 of the EP&A Act, which provides for contributions to CSC. The terms of the planning agreement shall be consistent with the general terms of agreement between CSC and Hera Resources Pty Limited outlined in Appendix 2.	1. Deed of Variation of Original Planning Agreement between Cobar Shire Council and Hera Resources Pty Ltd. 10 April 2013. 2. Email from Cobar Shire Council (S Poulter) to DPE (E Donnelley) titled "*Modification of Planning Agreement - Condition No.14 of the third modified consent*", dated 22 September 2016. The email confirms the execution of the deed of variation and compliance with Condition S2 C14 of the Approval. 3. Tax Invoice issued by Cobar Shire Council on 3 May 2018 for the voluntary Planning Agreement Contributions of $32,672 and $61,260)			Hera entered into a planning agreement with Cobar Shire Council (CSC) in accordance with Division 6 of Part 4 of the EP&A Act. Schedule 1 in the original planning agreement. The terms of the planning agreement are consistent with the general terms of agreement between CSC and Hera outlined in Appendix 2. The total contributions of $60,000 for road repair and maintenance contribution and $32,000 for the community fund contribution listed in Appendix 2 are the same as the total contributions listed in Schedule A of the planning agreement.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S2.15	Road Maintenance Contribution	By 30 September 2015, and annually thereafter until the cessation of transport operations, the Proponent shall make annual contributions of $20,000 to BSC for the maintenance of the unsealed sections of Nymagee-Hermidale Road.	1. Council accounts database extracts: 31/7/2015 - $10,000 14/06/2018 - $82,500 18/1/2018 - $22,000 13/10/2017 - $43,500	1. Interview L Richards. The road related payments made to Council consist of: $82,500 – Hera's contribution to the Hermidale-Nymagee sealing road project in 2018 $22,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2017/18 annual contribution) $43,500 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions) $10,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions once grading was completed)	1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Payments have been made to BSC during the audit period totalling $158,000 for road maintenance.	**COMPLIANCE**	
S3.1	Noise Criteria	The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land. Table 2: Noise Criteria dB(A) Receivers: All residential receivers Day : (LAeq(15-minute)) - 35 Evening(LAeq(15-minute)) - 35 Night (LAeq(15-minute)) - 35 / (LA1(max)) - 45 Note: Noise generated by the project is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. However, these criteria do not apply if the Proponent has an agreement with the relevant owner(s) to exceed the criteria,	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			No noise exceedances were detected over the 2018/9 reporting period. No noise exceedances were detected over the 2017/8 reporting period. No noise exceedances were detected over the 2016/7 reporting period.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.2	Operating Conditions	The Proponent shall:(a) implement best practice noise management to minimise the construction, operational and traffic noise of the project.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register)2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 20173. H*era Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 20184. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			Two noise complaints were received over the Audit Period relating noise (from the same complainant, one via the EPA). The complaints were investigated by Hera and responses provided to the Complainant. No noise exceedances were detected over the Audit Period.	**COMPLIANCE**	
		(b) maintain the effectiveness of any noise suppression equipment on site at all times and ensure defective equipment is not used operationally until fully repaired; and		1. Interview T Cox Maintenance Supervisor: Hera manage maintenance requests through the Pronto system. Routine maintenance program is managed using a manual (spreadsheet based) system.	1. The Auditor did not identify an maintenance issues during the site inspection. All equipment sighted appeared to be operational and appropriately maintained.	An effective maintenance system has been developed and implemented.	**COMPLIANCE**	
		(c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register) 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 3. H*era Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			Two noise complaints were received over the Audit Period relating noise (from the same complainant, one via the EPA). The complaints were investigated by Hera and responses provided to the Complainant. No noise exceedances were detected over the Audit Period.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.3	Noise Management Plan	The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. The plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval within six months of this approval;	1. *YTC Resources Ltd, Environmental Management Plan Noise Management, Revision 5*, dated 19 August 2013. 2. *Draft Noise Management Plan* Version 1.0 / Revision 6, dated 24/11/2017. 3. Email from DPE (S Shoesmith) to Hera (J Thompson) titled "FW*: Hera Noise Management Plan*", dated 26 June 2018. The email provided three (minor) comments on the contents of the plan. 2. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "Hera Project (MP 10_0191) Management Plan Approvals", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans. NOTE this approval predates the current version of the Noise Management Plan.	J Thompson: Please note, the approval letter is dated the 28/9/12. The Document Control table on the first page of the Noise Management Plan that a review of the document was completed in 2013 and no changes were made. Therefore, the 2013 version is the same as the 2012 version and has been approved by DPIE; Unfortunately, I am unable to locate the correspondence documentation between EPA and Hera in 2012. However, as this was approved by DPIE this correspondence must have been provided to DPIE at the time of approval.		A noise management plan has been prepared, the version on the Hera website is the 2013 update. No correspondence was available to verify that this plan was approved by DPE or that the EPA was consulted during preparation of the Plan. Finding: NOT VERIFIED NOTE: The Auditor assumes that the 2013 version of the NMP is the current version. Email correspondence from 2017/18 indicates that an updated to that plan was prepared and sent to DPE for review in 2017. DPE provided comment on the plan, however the plan has not been approved by DPE. No correspondence was sighted the confirmed that the EPA was consulted during the preparation of the 2017 Noise Management Plan update.	**Non-Compliance**	Finalise the review and stakeholder consultation of the 2019 version of the NMP to ensure it up to date then, then seek DPE approval for the revised plan.
		(b) describe the measures that would be implemented to ensure compliance with conditions 1 and 2 of this schedule; and	1. *YTC Resources Ltd, Environmental Management Plan Noise Management*, Revision 5, dated 19 August 2013.			Section 5 of the NMP describes the measures to be implemented to ensure compliance.	**COMPLIANCE**	
		(c) include a monitoring program that: (i) adequately supports the noise management system on site; (ii) includes a protocol for determining exceedances of the criteria identified in Table 2; and (iii) evaluates and reports on the effectiveness of the noise management system on site.	1. *YTC Resources Ltd, Environmental Management Plan Noise Management*, Revision 5, dated 19 August 2013.	J Thompson: Four properties have been identified in the Management Plan. Refer to Figure 3. The reason only 3 monitoring locations have been identified is that R1 and R2 are monitored from the same location. This is in accordance with advice we have received from noise specialists (report attached outlining this advice).		Section 6 of the NMP describes the monitoring that will be undertaken to assess compliance. Section 6.1.2 (Table 6) lists the noise monitoring locations at which quarterly monitoring will be undertaken. Four properties are identified.	**COMPLIANCE**	
S3.4	Blasting Criteria	The Proponent shall ensure that blasting on the site does not cause exceedances of the criteria in Table 3.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.5	Blasting Hours	The Proponent shall only carry out above ground blasting on site between 9:00am and 5:00pm Monday to Saturday, inclusive. No above ground blasting is allowed on Sundays, public holidays or at any other time without the written approval of the Secretary.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	**Not Triggered**	
S3.6		Underground blasting may be undertaken at any time, subject to compliance with the conditions of this approval.					**Noted**	
S3.7	Blasting Frequency	In relation to above ground blasting, the Proponent may carry out a maximum of: (a) three blasts per day, unless an additional blast is required following a blast misfire; and (b) five blasts per week, averaged over a calendar year, for all operations on the site. This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or blasts required to ensure the safety of the site or its workers.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	**Not Triggered**	
S3.8	Operating Conditions	During operation of the project, the Proponent shall:(a) implement best management practice to:(i) protect the safety of people and livestock in the surrounding area;(ii) protect public or private infrastructure/property in the surrounding area from any damage; and(iii) minimise the dust and fume emissions from any blasting; and(b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site,to the satisfaction of the Secretary.		1. Audit interview (J Thompson): no damage to private property or livestock has occurred as a result of the blasting undertaken.		No damage to private property or livestock has occurred as a result of the blasting undertaken.	**COMPLIANCE**	
S3.9	Blast Management Plan	The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Blast*, Revision 4, dated 30 August 2012. 2. *Blast Management Plan* Version 4.0 / Revision 5, dated May 2015.			A blast management plan has been prepared and is loaded onto the Hera Website.	**COMPLIANCE**	
		This plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval within six months of this approval;	1. *YTC Resources Ltd, Environmental Management Plan Blast*, Revision 4, dated 30 August 2012. 2. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0191) Management Plan Approvals*", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans.			DPE approved the plan on 28 September 2012. Correspondence confirming that the EPA was consulted during preparation of the Plan was not sighted during the audit. DPE approval for the 2015 plan was not sighted during the audit.	**COMPLIANCE**	
		(b) describe the blast mitigation measures that would be implemented to ensure compliance with conditions 4-8 of this schedule; and	1. *YTC Resources Ltd, Environmental Management Plan Blast*, Revision 4, dated 30 August 2012.			Section 5 of the BMP describes the measures to be implemented to ensure compliance.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(c) include a blast monitoring program to evaluate the performance of the project.	1. *YTC Resources Ltd, Environmental Management Plan Blast*, Revision 4, dated 30 August 2012.			Section 5 of the BMP describes the blast monitoring program to be assess compliance.	**COMPLIANCE**	
S3.10	Odour	The Proponent shall ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register)		1. No offensive odours at or near the site boundaries were detected by the Auditor during the site inspection.	No odour complaints have been received by Hera during the Audit Period.	**COMPLIANCE**	
S3.11	Greenhouse Gas Emissions	The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas*, Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015.			Greenhouse management strategy has been prepared for the Hera operation (Section 5.8 of the AQGMP).	**COMPLIANCE**	
S3.12	Dust	The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 4, 5 or to 6 at any privately-owned land. See Tables 2 - 4, including the notes on page 7 of the permit	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas*, Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 *5. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**Non-Compliance**	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.
S3.13		The Proponent shall ensure that all point-source discharge locations on the site are designed and operated to comply with the maximum discharge concentrations applicable under the Protection of the Environment (Clean Air) Regulation 2010 and the requirements of any Environment Protection Licence issued for the project under the POEO Act.	1. *Report Number R006532, Emission Testing Report Aurelia Metals, Nymagee*, dated 24 October 2018. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all limits except Cadmium (limit 0.2 mg/m3 - result 0.62 mg/m3). 2. Report Number R004870, Emission Testing Report Aurelia Metals, Nymagee, dated 5 October 2017. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all emission limits. 3. Report Number R003726, Emission Testing Report Aurelia Metals, Nymagee, dated 7 March October 2017. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all emission limits.			Two licenced air emission point sources are located that the site (the gold room stacks, EPL Sampling Points 24 and 39). The emission testing results for September 2018 found that cadmium levels exceeded the Environment (Clean Air) Regulation (2010) emission limits.	**Non-Compliance**	1. Ensure that any emission limit exceedances are fully investigated and reported to the EPA and DPIE.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.14	Operating Conditions	The Proponent shall: (a) implement best practice air quality management on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project;	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas*, Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 5. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant (refer to Photo #1) - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**COMPLIANCE**	
		(b) minimise any visible air pollution generated by the project;			1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**COMPLIANCE**	
		(c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Noted in Tables 4-6);			1. During the site inspection, the Auditor observed:- Water trucks operating on the mine access road- that application of molasses (sealant) on site access roads and roads in an around the process plant.- the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(d) take all practical measures to minimise dust emissions from the tailings storage facility; to the satisfaction of the Secretary			1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**COMPLIANCE**	
S3.15	Air Quality and Greenhouse Gas Management Plan	The Proponent shall prepare and implement an Air Quality and Greenhouse Gas Management Plan for the project to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas*, Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015.			DPE approved the plan on 28 September 2012. Correspondence confirming that the EPA was consulted during preparation of the Plan was not sighted during the audit. DPE approval for the 2015 plan was not sighted during the audit.	**COMPLIANCE**	
		This plan must: (a) be prepared in consultation with the EPA, and be submitted to the Secretary for approval within six months of this approval;	1. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0191) Management Plan Approvals*", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans. 2. Letter from EPA (B Tanswell) to RW Corkery (R Corkery) dated 19 Spetermber 2012. The letter refers to the AQGMP provided for review.			DPE approved the plan on 28 September 2012. DPE approval for the 2015 plan was not sighted during the audit, however as the 2012 vesion is loaded onto the web site, it is the Auditor's understanding that the 2012 version is the version that is being implemented. Correspondence was available to verify that the EPA was consulted during preparation of the first version of the plan.	**COMPLIANCE**	
		(b) describe the measures that would be implemented to ensure compliance conditions 10-14 of this schedule;	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The management measures to be implemented to control air emissions are provided in Section 5 of the plan. Note that the currently approved version of the AQGMP does not cover all of the current dust mitigation strategies (for example the use of molasses as a road sealant.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(c) describe the proposed air quality management system;	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.			The AQGMP adequately describes the air quality management system that is being implemented at the Mine.	**COMPLIANCE**	
		(d) include an air quality monitoring program that: (i) uses a combination of high volumes samplers and dust deposition gauges to evaluate the performance of the project; and (ii) includes a protocol for determining exceedances of the relevant conditions of this approval; and	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.	No where is this approval does it state that the Gold Room Stack must be monitored only that it should be designed to ensure compliance to air quality regulations. The requirement to monitor the gold room stack is a condition of the EPL and does not relate to this approval.	1. HVAS Sampler (refer to Photo #2) and Dust Deposition Gauges	Section 6 of the plan addresses air quality monitoring. Dust deposition monitoring and HVAC sampling (including PM10 monitoring) is covered in the plan, however the monitoring of the Gold room stacks is not covered in the plan, this is a requirement of the EPL.	**Non-Compliance**	Ensure that the 2019 version of the AQGGMP details all monitoring and compliance assessment actions required by this Approval and the EPL.
		(e) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site.	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.			Greenhouse management strategy has been prepared for the Hera operation (Section 5.8 of the AQGMP).	**COMPLIANCE**	
S3.16	Meteological Monitoring	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.	1. Excel Spreadsheet titled "*Daily_Summary (22).csv*". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.		1. Met Station (refer Photo #3).	Weather station monitoring results for the Audit Period were sighted by the Auditor. The weather station satisfies the requirements of the Approved Methods for Sampling Air Pollutants in New South Wales Guidelines.	**COMPLIANCE**	
S3.17	Water Supply	The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Secretary.	1. Site Water Balance			Hera has prepared an appropriate water balance with the operation has identified sources of water to ensure that there is adequate supply for the site operations.	**COMPLIANCE**	
S3.18	Water Discharges	The Proponent shall ensure that all surface water discharges from the site comply with: (a) section 120 of the POEO Act; or (b) the discharge limits (both volume and quality) set for the project in any applicable EPL.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019			The 2016/7 Annual review reported that two discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharges occurred on 20 July 2016 and 16 December 2016 and were reported to the DPE, EPA and DRE. The 2017/8 Annual review reported that there were several WAD cyanide incidents during this reporting period The 2018/9 Annual Review reported that During the reporting period there were no discharges from the sediment basin and no flows recorded in the clean water by pass drain through site. There were also no flows in any creeks or drainage courses	**Non-Compliance**	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.
S3.19		The concentration of Weak Acid Dissociable (WAD) cyanide in tailings discharged from the discharge point to the tailings storage facility shall not exceed 10 mg/L.					**Non-Compliance**	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.20		The concentration of Weak Acid Dissociable (WAD) cyanide at the discharge point to the process water dam shall not exceed 20 mg/L (90th percentile) or 30 mg/L (maximum).				across site as a result of the extended drought. Therefore no surface water monitoring of creeks or drainage lines was able to be undertaken.	**Non-Compliance**	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.
S3.21	Compensatory Water Supply	The Proponent shall provide a compensatory water supply to any owner on privately-owned land whose water supply is adversely impacted (other than an impact that is negligible) as a result of the project, in consultation with DPI Water, and to the satisfaction of the Secretary. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent in volume and quality to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified, unless otherwise agreed with the landowner. If the Proponent and the affected landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.	1. Email from Hera (J Thompson) to DPI Water (T Baker) and DPE (K O'Reilly) titled "Standing water level WB18", dated 23 November 2018. The email states that Hera had commenced negotiations with a landholder in regards to a reduction in groundwater levels (at the landowners property).			Negotiations have commenced with one impacted (groundwater) landowner.	**COMPLIANCE**	
S3.22	Design and Permeability of Storages	The Proponent shall ensure that the floor and walls of: (a) the leachate management pond, seepage collection pond (associated with the tailings storage facility), process water dam and raw water dam are lined to achieve a permeability of no less than 1 x 10-9 m/s to a depth of at least 900 millimetres of clay (or equivalent); and	1. Email (and attachments) from Total Lining Systems (S Short) to YTC Resources (S Pearce) titled " *Sediment Pond Lining*", dated 7 August 2017. The email provides copies of the leachate pond design and construction QA/QC report.		1. Process Water Management System (refer Photo #4).	The leachate management system ponds are lined with 2 mm HDPE. The QA reports associated with the construction of the ponds does not certify the permeability of the liners. Finding: Not Verified.	**Non-Compliance**	Obtain a copy of the relevant engineering report certifying the permeability of the pond liners.
		(b) the tailings storage facility (except for the seepage collection pond) is lined to achieve a permeability of no less than 1 x 10-8 m/s to a depth of at least 600 millimetres of clay (or equivalent). Note: An alternative permeability standard may be acceptable following completion of an appropriate risk assessment undertaken in accordance with the Environmental Guidelines – Management of Tailings Storage Facilities (VIC DPI, 2004), to the satisfaction of the EPA and the Secretary.	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW*, September 2016. The report stated: "*Section 4.3 (p5) of the TSF Stage 1 Construction Report (Coffey, 17 June 2014) confirms that the permeability of the TSF basin floor exceeded the required value of 10-8 m/s over a 600mm depth*".		1. Tailings Storage Facility (Refer to Photo #5).	The permeability of the TSF satisfies the 10-8 m/s standard.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.23		The clean water diversion around the tailings storage facility shall be designed, constructed and maintained to prevent the probable maximum flood from the catchment upstream of the facility from entering the facility.	1. Letter from Hera (J Thompson) to DPE (K O'Reilly) titled "*Independent Environmental Audit Aug 2013 – Sep 2016 – Action Plan Condition 23, Schedule 3 Design and Permeability of Storages*", dated 21 December 2017. The includes a plan showing the TSF diversion drain construction compliance with the requirements of this Condition. The letter also contained a survey plan that confirms the that the as built structure meets these requirements.		1. TSF Clean Water Diversion (Refer Photo #6)	The clean water diversion meets the design requirements detailed in this Condition.	**COMPLIANCE**	
S3.24		The process water and raw water dams shall be maintained with a minimum freeboard sufficient to accommodate a 1 in 100-year ARI, 72-hour rainfall event without overtopping at all times.	1. *Draft Water Management Plan 2018, Version 6*, dated November 2019. Section 4.1.4 discusses contaminated water management, including process water and refers specifically to the 200mm freeboard in the process water pond.		1. The 200 mm free board is indicated by a marker installed in the pond.	A freeboard of at least 200mm is to be achieved as a minimum operational condition allowing capacity to capture the 100 year 72 hour design rainfall event (GHD: July 2016: Water Management Plan). Currently the process water dam height set point is controlled at 80%.	**COMPLIANCE**	
S3.25	Water Management Plan	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must be prepared in consultation with EPA and DPI Water	1. *Aurelia - Hera Gold WMP Water Management Plan 2016*, prepared by GHD. 2. *Draft Water Management Plan 2018, Version 6*, dated November 2019.			A Water Management appears to have been prepared in 2013 by RW Corkery. A copy of this plan was not available at the time of the audit and no correspondence relating to that version of the plan was sighted. GHD prepared an updated plan in 2016. Correspondence from DPE approving the plan author(s) or approving the plan was not sighted during the audit. The plan has been further revised in 2018, but has yet to be approved by DPE. Correspondence from DPE approving the plan author(s) or approving the plan was not sighted during the audit.	**COMPLIANCE**	
		The plan must be prepared by suitably qualified and experienced persons whose appointment has been approved by the Secretary,	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW*, September 2016. The report stated: "*A letter was received from the NSW DPI on 31st August 2012 approving the three experts (Mark Passfield, James Morrow and Wayne Russell) that contributed to the development of the site Water Management Plan (WMP), which was coordinated by external consultant RW Corkery and Co Pty Ltd.*"			DPI Water endorsed the appointment of three experts to prepare the original plan on 31st August 2012. Correspondence from DPE approving the appointment of the authors of the 2016 or 2018 plan revisions was not sighted during the Audit. Finding: NOT VERIFIED	**Non-Compliance**	Request approval from DPIE for the appointment of the experts responsible for the (yet to be approved) 2019 Water Management Plan.
		and submitted to the Secretary for approval within six months of this approval, or prior to commencement of mining operations under this approval, whichever is sooner;				Correspondence verifying that the original plan was submitted to DPE / DPI was not sighted during the Audit. Finding: NOT VERIFIED	**Non-Compliance**	Ensure that the current version of the Water Management Plan is approved by DPIE.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		In addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include: (a) a Site Water Balance that includes details of: • sources of water supply; • water use on site, including any potable water use; • water management on site; • off-site water discharges, including volume, timing and release point infrastructure requirements; and • reporting procedures including comparisons of the site water balance for each calendar year; and	1. *Draft Water Management Plan 2018*, Version 6, dated November 2019. The site water balance is provided in Section 4.5 and Appendix F of the plan.			The water balance model provided in the Draft Plan (the auditor understands that this unapproved version of the plan is currently being implemented) meets the requirements of this Condition.	**COMPLIANCE**	
		(b) a Surface Water Management Plan, which includes:• baseline data on surface water flows and quality in waterbodies that could be affected by the project;• a detailed description of the surface water management system on site, including the:- clean water diversion systems;- erosion and sediment controls; and- water storages, including the tailings storage facility, raw water or process water dams;• design objectives and performance criteria, including trigger levels for investigating any potentially adverse impacts, for the following:- the water management system;- water storages including the tailings storage facility, raw water or process water dams; and- surface water quality in waterbodies that could be affected by the project;• performance criteria for surface water quality attributes relevant to water quality impacts on biological diversity and aquatic ecological integrity, including cyanide, salinity, heavy metals, sediment load, pH, hardness and biological oxygen demand;• a program to monitor:- the effectiveness of the water management system;- surface water flows, quality, and impacts on water users;- potential acid rock drainage;- potential leakage or spillage from tailings, mineral concentrate or effluent pipelines;- post-closure water quality;- impacts on wildlife from exposure to cyanide or other toxic chemicals; and• a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project, including but not limited to management measures to reduce wildlife exposure to cyanide or other toxic chemicals;• reporting procedures for the results of the monitoring program; and	1. *Draft Water Management Plan 2018*, Version 6, dated November 2019. Section 4.1 describes the surface water system; Appendix G provides the Trigger Value Action Plan and Section 6.2 describes the surface water monitoring program.			The required elements of the Surface Water Management Plan are contained in the Draft Water Management Plan.	**COMPLIANCE**	

Project Approval 10_0191								
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		(c) a Groundwater Management Plan, which includes: • baseline data of all groundwater levels, yield and quality in the region, and any privately-owned groundwater bores that could be affected by the project; • detailed documentation of the operation of the seepage collection and storage system associated with the tailings storage facility and associated maintenance requirements; • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts, including but not limited to leakage from the tailings storage facility; • a program to monitor: - impacts on the groundwater supply of potentially affected landowners; - impacts on the volume of groundwater inflow into the underground workings; - regional groundwater levels and quality in all potentially affected aquifers; - potential acid rock drainage; - the effectiveness of the seepage collection and storage system and associated infrastructure in collecting and containing all seepage from the tailings storage facility and all other water storages that receive chemical or salt-laden water; - the quality of groundwater to be re-used on the site; - any post-rehabilitation seepage from the tailings storage facility; and • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse groundwater impacts of the project, including but not limited to: - procedures to minimise the potential for soil salinity, sodicity and other contaminant issues associated with the reuse of groundwater on site; and - measures to manage and mitigate any leakage from the tailings storage facility, including but not limited to that detected beyond the seepage collection and storage system.	1. *Draft Water Management Plan 2018*, Version 6, dated November 2019. Section 4.3 describes the groundwater system; Appendix G provides the Trigger Value Action Plan and Section 6.3 describes the groundwater monitoring program.			The required elements of the Groundwater Management Plan are contained in the Draft Water Management Plan.	**COMPLIANCE**	
S3.26	Biodiversity Offset Strategy	By 31 July 2016, the Proponent shall prepare a Biodiversity Offset Strategy for the project to the satisfaction of the Secretary.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.	1. J. Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.	**Non-Compliance**	Seek DPE Approvals for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		The Strategy must: (a) be prepared in consultation with OEH;	1. Letter from OEH (S Cox) to RW Corkery (M Bland) titled "*Hera mine Biodiversity Management Plan*". The letter from OEH provides input into the Biodiversity off-set management plan (that includes the Off-set Strategy).			OEH were consulted during the preparation of the biodiversity management plan.	**COMPLIANCE**	
		(b) identify the portion of the Chelsea site (WLL 3881) that would be conserved in perpetuity to offset the impacts of the project using the Biobanking Assessment Methodology; and	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			The Biodiversity off-set area is identified in Section 4.2.	**COMPLIANCE**	
		(c) describe the specific management measures that would be implemented on the Chelsea site to conserve and improve the biodiversity values of the site over time.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			Section 4.6 of the Biodiversity Management Plan (Section 4 is the Biodiversity Offset Strategy) sets out eight specific management measures e.g. weed and pest management.	**COMPLIANCE**	
S3.27		Following approval, the Proponent shall implement the Biodiversity Offset Strategy to the satisfaction of the Secretary.		1. J. Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		Hera has been working on the Chelsea off-set area since 2016. A substantial volume of correspondence was provided to the auditor evidencing the consultation activities undertaken.	**Not Triggered**	
S3.28	Long Term Security	Within 12 months of the approval of the Biodiversity Offset Strategy, the Proponent shall make suitable arrangements to conserve the offset area identified in the Biodiversity Offset Strategy in perpetuity to the satisfaction of the Secretary.		1. J. Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.			**Not Triggered**	
S3.29	Biodiversity Management Plan	Within 6 months of approval and prior to the commencement of vegetation clearing on the site under this approval, the Proponent shall submit a Biodiversity Management Plan for the project site to the Secretary for approval. This plan must:	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.	1. J. Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in continuing delays in the finalisation of the plan.	**Non-Compliance**	Seek DPE Approval for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.
		This plan must: (a) be prepared by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW, September 2016*. The report stated: "*A letter (dated 31/08/12) from the NSW Department of Planning & Infrastructure endorsing Hera's proposed list of experts as being suitably qualified and experienced person(s) was sighted and is appended to the draft BMP*."			DPE approved the experts that prepared the Biodiversity Management Plan on 31 August 2012.	**COMPLIANCE**	
		(b) be prepared in consultation with OEH	1. Letter from OEH (S Cox) to RW Corkery (M Bland) titled "*Hera mine Biodiversity Management Plan*". The letter from OEH provides input into the Biodiversity off-set management plan (that includes the Off-set Strategy).			OEH were consulted during the preparation of the biodiversity management plan.	**COMPLIANCE**	

Project Approval 10_0191								
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		(c) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			The biodiversity off-set area is remote from the mine, therefore rehabilitation of the mine site cannot be integrated with the implementation of the Off-set strategy.	**Not Triggered**	
		(d) describe the short, medium, and long term measures that would be implemented to:(i) manage the remnant vegetation and habitat on the site and in the offset area/s (if and when applicable);(ii) minimise the impacts on Cobar Greenhood Orchid (Cryptostylis cobarensis), Lobed Blue-grass (Bothriochloa biloba) and hollow-bearing trees; and(iii) implement the biodiversity offset strategy (if and when applicable), including detailed performance and completion criteria;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			The Draft BMP addresses the sub-paragraphs of this condition as follows:(i) The short, medium, and long term measures that would be implemented to manage the remnant vegetation and habitat on the site and in the offset area/s (if and when applicable) are described in section 3.5 on Peak and section 4.6 Chelsea.(ii) The short, medium, and long term measures that would be implemented to minimise the impacts on Cobar Greenhood Orchid (Cryptostylis cobarensis), Lobed Blue-grass (Bothriochloa biloba) and hollow-bearing trees are described in section 3.5 on Peak and section 4.6 Chelsea.(iii) The short, medium, and long term measures to implement the biodiversity offset strategy (if and when applicable), including detailed performance and completion criteria are referenced in section 4.5	**COMPLIANCE**	
		(e) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			The draft BMP discusses trigger levels and monitoring of the mine site in section 4.5, with detailed trigger levels in Table 8.	**COMPLIANCE**	
		(f) include a detailed description of the procedures to be implemented for: (i) enhancing the quality of existing vegetation and fauna habitat; (ii) restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary); (iii) maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; (iv) collecting and propagating seed; (v) minimising the impacts on fauna on site, including pre-clearance surveys and minimising the potential exposure to tailings; (vi) controlling weeds and feral pests; (vii) controlling erosion;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			(i) A detailed description of the procedures to be implemented for enhancing the quality of existing vegetation and fauna habitat are described in sections 3.5.4.1 and 4.6 of the draft BMP. (ii) A detailed description of the procedures to be implemented for restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features are described in sections 3.5.4.2 (hollow trees), 3.5.3.2 (soil) and 3.5.3.6 (No cultural resources identified) of the draft BMP. (iii) A detailed description of the procedures to be implemented for maximising the salvage of resources within the approved disturbance area including vegetative, soil and cultural heritage resources, for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area are described in sections 3.5.4.2 (hollow trees), 3.5.3.2 (soil) and 3.5.3.6 (No cultural resources identified) of the draft BMP.	**COMPLIANCE**	

Project Approval 10_0191								
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		(viii) managing grazing and agriculture on site; (ix) controlling access; and (x) bushfire management;				v) A detailed description of the procedures to be implemented for collecting and propagating seed is listed in section 3.5.3.3 of the draft BMP. (v) A detailed description of the procedures to be implemented for minimising the impacts on fauna on site (section 5.5.3), including pre-clearance surveys and minimising the potential exposure to tailings is described in sections 3.5.4.3. (TSF – 2 management procedures). (vi) a detailed description of the procedures to be implemented for sections 3.5.7 (weeds) and section 3.5.4.5 (vertebrate pest management – Appendix A). (vii) The procedures to be implemented for controlling erosion are referred to in section 3.5.3.5 of the draft BMP which in turn refers to the Water Management Plan and the MOP. Section 4.2.2.4 of the MOP describes erosion control methods. (viii) A detailed description of the procedures to be implemented for managing grazing and agriculture on site is listed in section 3.5.5 of the draft BMP. (ix) A detailed description of the procedures to be implemented for controlling access is listed in sections 3.5.5 and 3.5.8 of the draft BMP. (x) A detailed description of the procedures to be implemented for bushfire management is listed in section 4.6.8 of the draft BMP.		
		(g) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			A seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria is listed in sections 5 (monitoring) and 7 (reporting) of the draft BMP.	**COMPLIANCE**	
		(h) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			A Trigger Action Response Plan (TARP) has been included in the management plan (Section 6). The TARP identifies the risks and includes relevant measures to be implemented to mitigate against these risks.	**COMPLIANCE**	
		(i) include details of who would be responsible for monitoring, reviewing and implementing the plan.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.			The details of the personnel who would be responsible for monitoring, reviewing and implementing the plan are listed in Table 2 of section 2.1 of the draft BMP.	**COMPLIANCE**	
S3.30		Within 6 months of the approval of the Biodiversity Offset Strategy, the Proponent shall submit an updated Biodiversity Management Plan to the Secretary for approval.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.	1. J. Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		The biodiversity management plan has not yet been approved.	**Not Triggered**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.31	Conservation Bond	Within three months of the approval of the Biodiversity Management Plan, the Proponent shall lodge a conservation bond with the Department to ensure that the biodiversity offset is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall cover the full cost of implementing the Biodiversity Offset Strategy and be verified by a suitably qualified rehabilitation specialist or quantity surveyor. If the biodiversity offset is implemented to the satisfaction of the Secretary, the Secretary will release the conservation bond. If the offset strategy is not implemented to the satisfaction of the Secretary, the Secretary will call in all or part of the conservation bond, and arrange for the satisfactory implementation of the biodiversity offset.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine*, prepared by RW Corkery, dated June 2016.	1. J. Thompson 19 November 2019. The conservation bond has not yet been paid as the Biodiversity Management Plan has not been approved.		The biodiversity management plan has not been approved; therefore the payment of the conservation bond is not yet due.	**Not Triggered**	
S3.32	Heritage	The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan to the satisfaction of the Director-General. This plan must:	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage*, Revision 1.1, dated 19 August 2012. 2. *Environmental Management Plan Aboriginal Cultural Heritage* Version 5.0 / Revision 5, dated 2 May 2015.			The Aboriginal Heritage Management Plan was prepared in 2013. This plan has been approved by DPE. A subsequent version was prepared in 2015. No correspondence verifying that the 2015 version of the plan has been approved by DPE was sighted.	**COMPLIANCE**	
		(a) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage*, Revision 1.1, dated 19 August 2012. Section 6 of the plan details the consultation processes undertaken during the preparation of the plan.			The 2013 Aboriginal Heritage Management Plan contains details of the consultation undertaken during the preparation of the plan.	**COMPLIANCE**	
		(b) be submitted to the Secretary for approval within six months of this approval; and	1. Letter from DPE (K Winwood) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0191) Heritage Management Plan*", dated 5 October 2012. The letter provided DPE approval for the Aboriginal Heritage Management Plan.			The Heritage Management Plan was approved by DPE on 5 October 2012.	**COMPLIANCE**	
		(c) describe the measures that would be implemented for:• monitoring all new surface disturbance on site for unidentified Aboriginal objects;• managing the discovery of any human remains or previously unidentified Aboriginal objects on site; and• ensuring ongoing consultation with Aboriginal stakeholders in the conservation and management of any Aboriginal cultural heritage values on site.	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage*, Revision 1.1, dated 19 August 2012. Section 6 of the plan details the consultation processes undertaken during the preparation of the plan.			Section 4.5 (Roles and Responsibilities) allocates responsibility to the Environmental Officer to undertake inspections of any area that has not been surveyed, prior to any new surface disturbances. Section 6.2 discusses the process for dealing with unexpected finds and the consultation (with aboriginal groups) to be implemented.	**COMPLIANCE**	

Project Approval 10_0191								
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S3.33	Dangerous Goods	Transportation of all dangerous goods to or from the site shall be undertaken in strict accordance with Australian Code for the Transport of Dangerous Goods by Road and Rail.	1. *Traffic Management Plan*, Revision 3, dated 14 may 2016.			Section 5.4.4 of the Traffic Environmental Management Plan (revision 3 dated 15 August 2012) states that the Environmental Officer will be responsible to ensure that this condition is satisfied, and refers to the Hazardous Material Management Plan (HMMP). Section 5.10 of the HMMP states that "transportation of hazardous materials to Hera will only be undertaken by contractors who are certified to carry dangerous goods and have been trained in the "Australian Code for the Transport of Dangerous Goods by Road and Rail"" (the Code).	**COMPLIANCE**	
S3.34	Road Upgrades	Within 6 months of the date of this approval, the Proponent shall: (a) commission a suitably qualified independent expert, whose appointment has been approved by the Secretary, to undertake a design and pavement condition review for the intersection of Burthong Road and Priory Tank Road, which: (i) identifies any deficiencies in the design or pavement condition of the intersection; (ii) recommends appropriate design upgrades and pavement repairs taking into consideration the type, volume and direction of traffic generated by the mine; and (iii) ensures the recommended design is in accordance with the applicable AUSTROADS standards. (b) undertake intersection design and pavement upgrades in accordance with the recommendations of the review in (a), in consultation with CSC, and to the satisfaction of CSC.	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW*, September 2016. The report stated: "A suitably qualified independent expert whose appointment was approved by the Secretary (then known as the Director-General), was commissioned to undertake a design and pavement condition review for the intersection of Burthong Road and Priory Tank Road. This was done within 6 months of the date of the Project Approval. A letter (dated 22/1/13) of endorsement from the Director-General referring to Conditions 34 and 35 of the Project Approval was sighted.." 2.*Intersection Assessments Nymagee and Hermindale Road* (plans) prepared by Geolyse. 3. Hera Resources Purchase Order PO5-7681-1, dated 13 November 2015.			Hera has commissioned the design of the intersection in accordance with this Condition. The works in paragraph (b) were completed by CSC in January/February 2016 (audit interview). Aurelia purchase order of 13 November 2015 was sighted. These works were undertaken prior to this Audit Period.	**Not Triggered**	
S3.35		Within 6 months of the date of this approval, the Proponent shall: (a) commission a suitably qualified independent expert, whose appointment has been approved by the Secretary, to undertake a review of the existing traffic control devices on Burthong Road and Priory Tank Road, which: (i) reviews all existing traffic devices, including traffic signs, traffic signals, pavement markings, guide posts, delineators and safety barriers, and identifies any deficiencies; and (ii) recommends appropriate upgrades in accordance with the applicable AUSTROADS standards; (b) install traffic control devices in accordance with the recommendations of the review in (a), to the satisfaction of CSC.	1. *Review of Traffic Control Devices Hera Mine to Hermindale Siding*, prepared by Geolyse, dated May 2014. 2. *Independent Environmental Audit, Hera Resources Pty ltd*, Hera Project, NUMAGEE NSW, September 2016. The audit report stated, with respect to Condition S3.35 "A letter (dated 22/1/13) of endorsement from the Director-General referring to Conditions 34 and 35 of the Project Approval was sighted". 3. Letter from Hera (D Fredrickson) to CSC (K Page) titled "*RE: Hera Resources Amendment to Concentrate Haulage Route*", dated 20 June 2014. The letter outlines Hera's commitment to CSC to fund the upgrade works recommended in the Geolyse report.			Hera commissioned the required report and funded the installation of the required traffic controls. Installation of traffic control devices in accordance with the recommendations of the review in paragraph (a) had not been completed within 6 months of the date of the Project Approval.	**Non-Compliance**	This is an historical non-compliance. The works have been completed. No further action required.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.35A		Prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, or an alternative date nominated by BSC and CSC (with respect to the works within the relevant local government area), the Proponent shall implement, or contribute to the cost of implementing the recommendations in the report titled Visual Review of Traffic Control Devices – Hera Mine to Hermidale Siding prepared by Geolyse Pty Ltd and dated 7 May 2014, to the satisfaction of BSC and CSC.	1. Email from BSC (G Bourke) to Hera (S Haures) titled " *Nymagee to Hermindale Road*", dated 5 November 2014. The email refers to the receipt by Council of the Visual Road Pavement Assessment Report and committed to undertaking repairs to the road on an as needs basis. 2. Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW, September 2016.			The recommendations in the Geolyse report dated 7 May 2014 had not been implemented prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road in October 2014.	**Non-Compliance**	This is an historical non-compliance. The works have been completed. No further action required.
S3.35B		Prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, or an alternative date nominated by CSC, the Proponent shall upgrade the intersection of Hartwood Street and Milford Street in accordance with the recommendations of the report titled Geotechnical Investigation of Hartwood Street and Milford Street on Priory Tank Road, Nymagee NSW, prepared by Envirowest Consulting Pty Ltd dated 23 May 2014 and the relevant AUSTROADS standards, to the satisfaction of CSC.	1. Report titled Geotechnical Investigation of Hartwood Street and Milford Street on Priory Tank Road, Nymagee NSW, prepared by Envirowest Consulting Pty Ltd dated 23 May 2014 2. Email from CSC (A Shepard) to Hera (J Thompson) titled "FW: Nymagee Intersection Works", dated 23 August 2016. The email confirms that the intersection works had been completed.			The works required by this Condition were completed (by Council).	**COMPLIANCE**	
S3.35C		Every two months during the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, the Proponent shall (a) inspect the condition of the unsealed section of the transport route in consultation with BSC; and (b) grade the unsealed section of Nymagee-Hermidale Road where required and as identified in the inspection carried out in accordance with condition 35C(a), to the satisfaction of BSC.	1. Records of inspection of the unsealed section of Nymagee - Hermidale Road for the past three years		1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Records of inspection were sighted by the Auditor. The Nymagee - Hermidale Road is now sealed for its entire length.	**COMPLIANCE**	
S3.36	Access Road and Intersection Construction	The Proponent shall construct the site access road for heavy vehicles, and associated intersection of this access road and Burthong Road, prior to the commencement of construction of the process plant. The intersection shall be designed and constructed to the satisfaction of CSC and in accordance with the applicable AUSTROADS standards.	1. Letter from CSC approving the design and construction of the Access Road and Intersection		1. The site access roads and intersections have been constructed. Refer to Photo #7.	Hera had constructed the site access road for heavy vehicles, and associated intersection of this access road and Burthong Road prior to the commencement of construction of the process plant (audit interview). It was also visually verified in the July 2013 Audit that road construction had begun prior to the commencement of construction of the process plant.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.37	Monitoring of Concentrate Transport	The Proponent shall: (a) keep accurate records of the: (i) amount of lead and zinc concentrate transported from the site (on a monthly basis); and (ii) the date and time of loaded truck movements from the site; and (b) provide the Secretary with a summary of these truck movements in the Annual Review.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			Hera keeps accurate records of the amount of lead and zinc concentrate transported from the site by calculating the net weight of each truck load. A dedicated weighbridge is located on site for this purpose. Concentrate tonnage records are kept in the metallurgy database (MPX-DS) on a per truck basis (sighted). Monthly tonnage amounts can be calculated and are also available on Aurelia's website (sighted). Hera publish the required information in the Annual Reviews.	**COMPLIANCE**	
S3.37A	Transport of Concentrate to Hermindale Rail Siding	The Proponent shall restrict the transport of concentrate to the Hermidale rail siding via the Nymagee-Hermidale Road during daylight hours and limit vehicle movements (entering and leaving the site) to 4 per day, averaged over a calendar month, unless otherwise agreed by the Secretary.	1. *Traffic Management Plan*, Version 3.0, dated 14 May 2016. 2. *Drivers Code of Conduct* Revision 2.0, dated November 2018. 3. Records of concentrate transport for the past three years (monthly web reports)			Section 5.3 of the Traffic Management Plan refers to the concentrate transport limits. The Drivers Code of Conduct specifies the permitted concentrate transport times. A review of the monthly web reports confirmed compliance with the concentrate load limit of 4 trucks per day average over a year.	**COMPLIANCE**	
S3.38	Traffic Management Plan	The Proponent shall prepare and implement a Traffic Management Plan to the satisfaction of the Secretary.	1. *Traffic Management Plan*, Version 3.0, dated 14 May 2016. 2. *Traffic Management Plan* Version 3.0, dated February 2017. 2. Letter from DPE (C Preshaw) to Hera (J Thompson) titled "*Hera Gold Mine (10_0191) Approval of Traffic Management Plan*", dated 14 November 2017.			DPE approved the Traffic Management Plan in November 2017.	**COMPLIANCE**	
		The plan shall:(a) focus on traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale;	1. *Traffic Management Plan*, Version 3.0, dated February 2017.			The Traffic Management Plan does not clearly address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	**Non-Compliance**	Ensure that the latest revision of the Traffic Management Plan addresses traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.
		(b) describe the measures to minimise conflicts between road users and ensure that trucks from the mine do not travel through surrounding local roads;	1. *Traffic Management Plan*, Version 3.0, dated February 2017.			The responsibilities of truck drivers in relation to the minimisation of conflicts with other road users in contained in the Drivers Code of Conduct.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(c) be developed in consultation with both BSC and CSC and submitted for the approval of the Secretary prior to carrying out any development on the site under this approval.	1. Email from CSC (S Poulter) to Hera (J Thompson) titled " *Traffic Management Plan - submission for comment",* dated 20 February 2017. The email acknowledges the request for comment on the draft plan. 2. Email from BSC (G Bourke) to Hera (J Thompson) titled " *Traffic Management Plan - submission for comment*", dated 20 February 2017. The email acknowledges the request for comment on the draft plan.			Hera consulted with both Councils during the preparation of the Traffic Management Plan.	**COMPLIANCE**	
S3.39	Visual	The Proponent shall: (a) implement all reasonable and feasible measures to minimise the visual impacts, and particularly the off-site lighting impacts, of the project;			1. External lighting associated with the Mine surface facilities is not visible from neighbouring properties.	The processing plant and related infrastructure is well set back from the public road and is naturally screened due to the topography and trees.	**COMPLIANCE**	
		(b) ensure that all external lighting associated with project complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting, to the satisfaction of the Secretary.	1. Letter from Light Harmony (R Nixon) to Hera (S Ramsy) titled " *Compliance with Control of the Obtrusive Effects of Outdoor Lightings - AS4282*" dated 8 February 2017.		1. External lighting associated with the Mine surface facilities is not visible from neighbouring properties.	By letter dated 8 February 2017, Light Harmony (Lighting Engineering & Design Consultants) stated: "Based on the remote location and our assessment of the existing lighting system, we would deem that the Hera process plant and ancillary areas complies with the principles and guidelines of AS4282 Table 2.1 recommended maximum values of light technical parameters for the control of obtrusive light."	**COMPLIANCE**	
S3.40	Final Hazard Analysis	The Proponent shall prepare a Final Hazards Analysis (FHA) for the project to the satisfaction of the Secretary, in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.	1. *Environmental Management Plan Hazardous Materials*, Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Hazardous Materials Management Plan*", dated 1 May 2013.	Hera contend this condition should be Compliant. The condition states that this must be prepared to the satisfaction of the Secretary. As the Secretary has approved the plan, this condition has been satisfied. The issues you have identified are separate to this condition and I would suggest a recommendation and not mandated by the condition.		The September 2016 IER found that a Final Hazards Analysis (FHA) had not been completed. The recommendation to complete a final hazard analysis has not been actioned. A Preliminary Hazard Analysis (PHA) was completed by RW Corkery & Co as part of the EA (Nov. 2011) (sighted). Section 5.1 of the Hazardous Materials Management Plan states that "As there are no changes to the design of the Mine, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Condition 3(40) of Project Approval whereby a Final Hazards Analysis was to be prepared". The previous audit in July 2013 noted: "As the Hazardous Materials Management Plan has been approved by the Director-General, YTC Hera is compliant with this condition." However, the 2013 audit was conducted prior to the construction and operation of the processing plant; an area where the majority of the hazardous materials are stored or used. At the time of the audit in September 2016, it was observed that there are hazardous goods (e.g. LNG Class 2.1) and processes (e.g. Meta Foundries – gold room) that were not identified in the original PHA.	**Non-Compliance**	Conduct a Final Hazard Analysis in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.41	Hazardous Materials Management Plan	The Proponent shall prepare and implement a Hazardous Materials Management Plan for the project to the satisfaction of the Secretary. The plan must:	1. *Environmental Management Plan Hazardous Materials*, Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Hazardous Materials Management Plan*", dated 1 May 2013.			A hazardous Materials Management Plan has been prepared by Hera.	**COMPLIANCE**	
		(a) be prepared in consultation with the relevant government agencies including CSC, RMS, EPA, DPI Water, WorkCover NSW and DRE;				No correspondence was available to verify that the EPA, DPI Water, DRE, CSC, RMS, or Workcover were consulted during preparation of the Plan.	**Non-Compliance**	Finalise the review and agency consultation for the Hazardous Materials Management Plan.
		(b) be consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold;			1. Cyanide Storage Facilities (Refer to Photo #8).	Section 5.8 of the HMMP lists the cyanide controls to be used which are consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Code).	**COMPLIANCE**	
		(c) be submitted to the Secretary for approval prior to commencing mining operations under this approval;				The current version of the Hazardous Materials Management Plan has been approved by DPE.	**COMPLIANCE**	
		(d) describe the measures that would be implemented to: (i) ensure sodium cyanide and other toxic chemicals are stored and handled on the site in accordance with AS/NZ 4452 – The Storage and Handling of Toxic Substances; and (ii) ensure the transportation of hazardous materials to or from the site is undertaken in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection and the Australian Code for the Transport of Dangerous Goods by Road and Rail – current version; and				The HMMP does not satisfy paragraph (d)(i) in that it does not specify measures in relation to the storing and handling of lead nitrate (and toxic chemical). The plan does not satisfy paragraph (d)(ii) in that it does not describe the route selection for the transportation of cyanide from its point of origin to the mine in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection.	**Non-Compliance**	Finalise the review and agency consultation for the Hazardous Materials Management Plan and ensure it includes the relevant requirements of AS 4452.
		(e) detail the emergency procedures for the Project consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.				The HMMP does not satisfy paragraph (e) of this condition in that it does not include all of the procedures contained in the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	**Non-Compliance**	Finalise the review and agency consultation for the Hazardous Materials Management Plan and ensure it includes the relevant requirements of Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.
S3.42	Waste	The Proponent shall: (a) minimise the waste generated by the project;	1. *Environmental Management Plan Hazardous Materials*, Version 1.0, dated 9 April 2013.		1. Waste recycling including oil and scrap steel at the workshops as well as general waste segregation/recycling in strategically placed bins was sighted	Hera addresses waste minimisation and disposal in section 5.5 of the Hazardous Materials Management Plan (HMMP) .	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
					during the Audit. Refer to Photo #9.			
		(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and	1. Waste Disposal Records.		1. Waste bins are strategically located around the site. Suitable bins are available to allow segregation of wastes. Waste storage areas are clearly signposted. Refer to Photo #10.	Appropriate waste collection and storage facilities are provided. Waste records sighted demonstrate that appropriate waste disposal options are in place.	**COMPLIANCE**	
		(c) manage on-site sewage treatment disposal in accordance with the requirements of CSC, to the satisfaction of the Secretary.	1. Letter from CSC to YTC Resources titled "*Approval to Install / Construct a Sewage Management System*", dated 18 December 2012. 12 Letter from CSC to YTC Resources titled "Approval to Install / Construct a Sewage Management System", dated 23 September 2013 3. Certificate of Completion, Fuji CE6000 sewage treatment system - by True Water Australia, dated 9 August 2013.		1. Sewage Treatment Plant and irrigation areas.	Sewage treatment systems have been installed and are managed in accordance with Council requirements.	**COMPLIANCE**	
S3.43	Waste Rock Management Plan	The Proponent shall prepare and implement a Waste Rock Management Plan to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.2. *Draft Waste Rock Management Plan* , Revision 2, dated 24 November 2018.			The 2014 version of the plan has been approved by DPE and is the current version of the plan. A updated plan has been drafted, but not yet finalised or approved.	**COMPLIANCE**	
		The plan must: (a) be developed in consultation with the EPA and DPI Water;	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW*, September 2016. The Audit report stated: "The current Waste Rock Management Plan (WRMP) had been developed in consultation with the EPA and NOW. A letter (dated 21st November 2012) was sighted requesting comment from both the EPA and NOW. Letters of response (from NOW dated 21/06/13 and the EPA dated 21/12/12) were sighted."			The 2014 Waste Rock Management Plan (WRMP) was developed in consultation with the EPA and NOW.	**COMPLIANCE**	
		(b) submitted for the approval of the Secretary within six months of this approval;	1. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Waste Rock Management Plan*", dated 22 July 2013.			DPE approved the Waste Rock Management Plan in July 2013. The WRMP had not been prepared and submitted for the approval of the Secretary within six months of this Project Approval (audit interview).	**Non-Compliance**	Finalise the stake holder consultation and review the 2019 Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.
		(c) include a detailed description of the procedures to be implemented to monitor and manage potential acid forming material;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			A detailed description of the procedures to be implemented to monitor and manage potential acid forming material is described in section 4.3 of the WRMP	**COMPLIANCE**	

Project Approval 10_0191								
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		(d) reflect the groundwater and surface water monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation (covering monitoring methods, trigger levels and proposed management actions);	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.2.1 in the WRMP describes the monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation. Specific visual levels trigger proposed management actions such as pumping to the process water dam. Trigger levels for acid detection (e.g. ph levels) have not been included in the WRMP.	**Non-Compliance**	Finalise the stake holder consultation and review the 2019 Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.
		(e) ensure effective isolation of potential acid forming material in rock dumps;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Measures to effectively isolate potential acid forming material in rock dumps is described in section 4.3.3 of the WRMP. However, it was stated that both PAF and NAF are stockpiled in Cell 1 (PAF) which is contrary to Table 5 and the material handling flowsheet in Figure 3 of the WRMP. Risk is created when using this material as differentiation between NAF and PAF relies on visual inspection. There is a risk where PAF, instead of NAF, is used for other works on site (which has occurred on one occasion when PAF was used to construct a clean water drain; it was retrieved on the same day and self-reported) (audit interview and observation).	**Non-Compliance**	Finalise the stake holder consultation and review the 2019 Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.
		(f) include procedures for appropriate testing of potentially acid forming waste rock prior to it being bought to the surface;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.1 of the WRMP includes procedures for appropriate testing of potentially acid forming waste rock prior to it being bought to the surface.	**COMPLIANCE**	
		(g) include procedures for prioritising the relocation of potential acid forming material to a suitable underground location prior to oxidation;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP includes procedures for prioritising the relocation of potential acid forming material to suitable underground locations prior to oxidation.	**COMPLIANCE**	
		(h) include procedures to ensure that material relocated underground does not, to the extent reasonable and feasible, further oxidise or cause impact to groundwater;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP includes procedures to ensure that material relocated underground does not, to the extent reasonable and feasible, further oxidise or cause impact to groundwater.	**COMPLIANCE**	
		(i) notwithstanding (e) above, trigger levels for any material that has oxidised to the extent that it cannot be placed underground without impacting groundwater quality and procedures for adequate capping and sealing of such material at the surface;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP describes management plans for material that has oxidised to the extent that it cannot be placed underground without impacting groundwater quality	**COMPLIANCE**	
		(j) detail proposed neutralising options to be implemented for oxidising material stored or encapsulated aboveground; and	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP details proposed neutralising options (such as crushed limestone) to be implemented for oxidising material stored or encapsulated aboveground.	**COMPLIANCE**	
		(k) where there is likely to be an extended time between placement of potential acid forming material underground, details of proposed methods to prevent oxidation of the material underground or to otherwise manage acid drainage to prevent impacts on groundwater.	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock*, Revision 1.0, dated 15 July 2014.			Section 5 of the WRMP details proposed methods to manage acid drainage to prevent impacts on groundwater where there is likely to be an extended time between placement of potential acid forming material underground.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S3.44	Rehabilitation Objectives	The Proponent shall rehabilitate the site to the satisfaction of the Executive Director Mineral Resources. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (as reproduced in Appendix 4), and comply with the objectives in Table 7:	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			The approved MOP describes the rehabilitation plans for the Mine site. Section 4.3 of the MOP describes the Rehabilitation Objectives. Full rehabilitation of the site is not yet required as the mine is still operational.	**COMPLIANCE**	
S3.45	Progressive Rehabilitation	The Proponent shall carry out rehabilitation of the site progressively, that is, as soon as reasonably practicable after disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.			1. Previously disturbed areas have been revegetated.	The Auditor inspected all areas of the mine and observed that progressive rehabilitation (of previously cleared areas) has been undertaken.	**COMPLIANCE**	
S3.46	Rehabilitation Management Plan	The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director Mineral Resources.	1. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. The MOP contains the Rehabilitation Management Plan. *2.* Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP*", dated 27 February 2017.			Correspondence verifying that the 2017 version of the MOP was approved by DRE was sighted during the Audit.	**COMPLIANCE**	
		This plan must: (a) be prepared in consultation with the Department, OEH, EPA, DPI Water and CSC;	1. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP*", dated 27 February 2017.			CSC has not been consulted during the preparation of the MOP (and therefore the rehabilitation action plan. The most recent version of the MOP / rehab management plan (submitted for approval on 6 Feb 2020) has been prepared in consultation with these agencies.	**Non-Compliance**	No action required.
		(b) be submitted to the Executive Director Mineral Resources for approval prior to carrying out development on the site under this approval;	1. Letter from NSW Trade and Investment - Resources and Energy (M Young) to Hera Resources titled "*Mining Lease No. 1686 - Mining Operations Plan Approval*" dated 14 June 2013. The letter approves the MOP versions 3.1 (dated 21 May 2013).			Correspondence verifying that the original MOP was approved by DRE was sighted during the Audit.	**COMPLIANCE**	
		(c) be prepared in accordance with any relevant DRE guideline;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			There are no current DRE rehabilitation management plan guidelines	**Noted**	
		(d) outline the procedures to be implemented to achieve the rehabilitation objectives in condition 44;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 5 of the MOP describes implementation of the Rehabilitation Strategy.	**COMPLIANCE**	
		(e) describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			The biodiversity off-set area is remote from the mine; therefore, rehabilitation of the mine site cannot be integrated with the implementation of the rehabilitation actions to be undertaken on the mine site.	**Not Triggered**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(f) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 6 of the MOP describes the performance and completion criteria of the Rehabilitation Strategy.	**COMPLIANCE**	
		(g) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 5 of the MOP describes implementation of the Rehabilitation Strategy.	**COMPLIANCE**	
		(h) include interim rehabilitation where necessary to minimise the area exposed for dust generation;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 7.2 .6 of the MOP describes the proposed rehabilitation activities that will be implemented over the life of the mine to minimise dust generation.	**COMPLIANCE**	
		(i) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 8 of the MOP describes the monitoring and reporting that will be undertaken in relation to the Rehabilitation Strategy.	**COMPLIANCE**	
		(j) build, to the maximum extent practicable, on the other management plans required under this approval.	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.				**Noted**	
S4.1	Notification of Landowners	Within 3 months of the date of project approval, the Proponent shall notify in writing the owners of any privately-owned land within two kilometres of the approved blasting on site that they are entitled to request an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated.	1. *Independent Environmental Audit, Hera Resources Pty ltd*, Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**	
S4.2		Within two weeks of obtaining monitoring results showing: (1) an exceedance of any relevant noise criteria in Schedule 3, the Proponent shall notify affected landowners and/ or tenants in writing of the exceedance, and provide regular monitoring results to each of these affected parties until the project is again complying with the relevant criteria; and				Noise exceedances have been recorded.	**Not Triggered**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(2) an exceedance of any relevant air quality criteria in Schedule 3, the Proponent shall send the affected landowners and/ or tenants a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time).	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC. 2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC. 3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC. 4. Notice of HVAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC. 5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC. 6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 7. Notice to EPA of visible dust generation on tailings dam - incident report - (16 September 2019) . 8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC.	J Thompson: As per the incident reports in 2016, 2017 and 2018 copies were not supplied to land holders as no land holders were impacted. The land holders are more than 2km from site and therefore have not be affected by the dust .		No land holders were impacted by dust emissions from the site during the Audit Period.	**Not Triggered**	
S4.3	Independent Review	If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land. If the Secretary is satisfied that an independent review is warranted, then within two months of the Secretary’s decision the Proponent shall: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: (i) consult with the landowner to determine his/ her concerns; (ii) conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and (iii) if the project is not complying with these criteria then identify measures that could be implemented to ensure compliance with the relevant criteria. (b) give the Secretary and landowner a copy of the independent review.		1. J. Thompson 19 November 2019. No requests for independent reviews have been received..		No requests for independent reviews have been received.	**Not Triggered**	
S4.4		If the independent review determines that the project is complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.		1. J. Thompson 19 November 2019. No requests for independent reviews have been received.		No requests for independent reviews have been received.	**Not Triggered**	
S4.5		If the independent review determines that the project is not complying with the relevant criteria in Schedule 3, then the Proponent shall: (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and		1. J. Thompson 19 November 2019. No requests for independent reviews have been received.		No requests for independent reviews have been received.	**Not Triggered**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		appointed independent person, and conduct further monitoring until the project complies with the relevant criteria; or (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Secretary.						
S5.1	Environmental Management Strategy	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. The strategy must:	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			An Environmental Management Strategy has been prepared.	**COMPLIANCE**	
		(a) be submitted to the Director-General for approval prior to the commencement of Mining activities;				Advise DPIE that the EMS has been reviewed and that no changes have been made to the document, but that the revision number and issue date have been updated.	**Non-Compliance**	Ensure that the current version of the Environmental Management Strategy is approved by DPIE.
		(b) provide the strategic framework for environmental management of the project;	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			The EMS provides a simple framework for the management of the environmental obligations associated with the Project. The framework presented in the EMS is based on ISO 14001. The framework as implemented is not sufficient to adequately manage Hera's compliance obligations under this Approval.	**Non-Compliance**	Implement the Environmental Management System Recommendations described in Section 7.1 of this report.
		(c) identify the statutory approvals that apply to the project;	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			Section 3 of the EMS discusses the Planning Approval applicable to the mining operations.	**COMPLIANCE**	
		(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			Section 9 of the EMS describes the key roles and responsibilities.	**COMPLIANCE**	
		(e) describe the procedures that would be implemented to: · keep the local community and relevant agencies informed about the operation and environmental performance of the project; · receive, handle, respond to, and record complaints; · resolve any disputes that may arise during the course of the project; · respond to any non-compliance; and · respond to emergencies; and	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			Section 8 of the EMS describes the complaints management and dispute resolution processes.	**COMPLIANCE**	
		(f) include: · copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and · a clear plan depicting all the monitoring to be carried out in relation to the project.	1.*Environmental Management Strategy,* Version 3.0, dated 12 November 2017.			Section 5.2 of the EMS references the management plans required by the Planning Approval.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S5.2	Adaptive Management	The Proponent shall assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.					**Noted**	
		Where any exceedance of these criteria and/or performance measures has occurred, the Proponent shall, at the earliest opportunity:(a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC.2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC.3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC.4. Notice of HVAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC.5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC.6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC..7. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC.8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC.9. Notice of WAD exceedance and incident report - (20 September 2017) sent to DPE, DRE, EPA.10. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1580504, dated13 June 2019.			The Auditor has reviewed exceedance (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates that all exceedances were reported to DPE, DRE, EPA and where required to Council.	**COMPLIANCE**	
		(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and	1. Notice of WAD exceedance and inci2. dent report - (20 September 2017) sent to DPE, DRE, EPA.. The report relates to a failure to collect and analyse Wad samples (due to equipment loss in a laboratory fire and the subsequent detection of a WAD exceedance. 2. Notice of WAD exceedance and incident report - (24, 25 and 26 April 2018) sent to DPE, DRE, EPA.. The report relates to the detection of a WAD exceedances.			The Auditor has reviewed exceedance (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates incident reports were prepared and issued to the relevant Authorities.	**COMPLIANCE**	
		(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.				DPE has not instructed Hera to implement and remediation strategies during the Audit Period.	**Not Triggered**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S5.3	Management Plan Requirements	The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data;	1. YTC Resources Ltd, Environmental Management Plan Noise Management, Revision 5, dated 19 August 2013. 2. YTC Resources Ltd, Environmental Management Plan Blast, Revision 4, dated 30 August 2012. 3. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012. 4. Draft Water Management Plan 2018, Version 6, dated November 2019. 5. Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine, prepared by RW Corkery, dated June 2016. Note that this plan incorporates the Biodiversity Off-set Strategy. 6. YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage, Revision 1.1, dated 19 August 2012. 7. Traffic Management Plan, Version 3.0, dated 14 May 2016. 8. Environmental Management Plan Hazardous Materials, Version 1.0, dated 9 April 2013. 9. YTC Resources Ltd, Environmental Management Plan Waste Rock, Revision 1.0, dated 15 July 2014. 10. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. The MOP incorporates the Rehabilitation Management Plan. 11. Environmental Management Strategy, Version 3.0, dated 12 November 2017.			With the exception of the MOP and the TMP, current versions of the Plans (that is those that were approved by DPE) were prepared in 2012/13. The plans were prepared in accordance with the guidelines relevant in 2013 and reference, where applicable baseline data.	COMPLIANCE	
		(b) a description of: · the relevant statutory requirements (including any relevant approval, licence or lease conditions); · any relevant limits or performance measures/criteria; and · the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;				With the exception of the MOP, EMS and TMP, current versions of the Plans (that is those that were approved by DPE and uploaded to the mine website at the time of the audit) were prepared in 2012/13. Variations to the Project Approval had been approved during that time and those modifications are in general not fully reflected in most of the plans. The Auditor has been advised that those plans have now been revised the consultation / approval of those plans has commenced.	Non-Compliance	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to reflect changes in the approval, legislative changes and developments in environmental management standards applicable to gold mining operations.
		(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;				each plan contains a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures.	COMPLIANCE	
		(d) a program to monitor and report on the: · impacts and environmental performance of the project; and · effectiveness of any management measures (see (c) above);				Each plan contains a program to monitor and report on the: · impacts and environmental performance of the project; and · effectiveness of any management measures.;	COMPLIANCE	
		(e) a contingency plan to manage any unpredicted impacts and their consequences;				Each plan contains a contingency plan to manage any unpredicted impacts and their consequences.	COMPLIANCE	
		(f) a program to investigate and implement ways to improve the environmental performance of the project over time;				The plans in general do not provide a program to investigate and implement ways to improve the environmental performance of the project over time.	Non-Compliance	During the review and revision of each plan required under this Approval, develop a program to investigate and implement ways to improve the environmental performance of the project over time.
		(g) a protocol for managing and reporting any: · incidents; · complaints; · non-compliances with statutory requirements; and · exceedances of the impact assessment criteria and/or performance criteria; and				Each plan describes a protocol for managing and reporting any: · incidents; · complaints; · non-compliances with statutory requirements; and · exceedances of the impact assessment criteria and/or performance criteria.	COMPLIANCE	
		(h) a protocol for periodic review of the plan.				Each plan describes a protocol for periodic review of the plan.	COMPLIANCE	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S5.4	Annual Review	By the end of December each year, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019. 4. Letter from DPE K O'Reilly) to Hera (J Thompson) titled "*Hera Mine - PA 10_0191 (MOD 4) Annual Environmental Review Report 16 May 2016 to 15 May 2017*", dated 26 September 2017.			Letters approving each of the Annual Reviews from DPE were sighted.	**COMPLIANCE**	
		This review must: (a) describe the works (including rehabilitation) that were carried out in the previous year, and the works that are proposed to be carried out over current year;				The Annual Reviews submitted for 2016, 2017 and 2018 described the works undertaken during the respective reporting years, and a statement regarding the work proposed for the coming year, including rehabilitation works.	**COMPLIANCE**	
		(b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against: · the relevant statutory requirements, limits or performance measures/criteria; · the monitoring results of previous years; and · the relevant predictions in the EA;				The Annual Reviews submitted for 2016, 2017 and 2018 included reviews of the monitoring results against the emission / performance criteria specified in the Project Approval and the Environment Protection Licence.	**COMPLIANCE**	
		(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;				The Annual Reviews submitted for 2016, 2017 and 2018 did not clearly identify all non-compliances against the emission / performance criteria specified in the Project Approval and the Environment Protection Licence. For example Section 4.3 of the 2017/18 Environmental Review states "*There were several WAD Cyanide incidents during the reporting period*". The non-compliances were not specifically identified, nor was there any discussion of actions taken by Hera in response to the non-compliances.	**Non-Compliance**	Provide full details of all non-compliances against both the Planning Approval and EPL in the Annual Review. Provide details of actions taken in relation to each non-compliance.
		(d) identify any trends in the monitoring data over the life of the project;				The Annual Reviews submitted for 2016, 2017 and 2018 identified general trends in emission / performance monitoring.	**COMPLIANCE**	
		(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and				Section 4 of the Annual Reviews provide an assessment of actual against predicted impacts (as presented in the EIS).	**COMPLIANCE**	
		(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.				The Annual Reviews submitted for 2016, 2017 and 2018 identified what measures will be implemented over the next year to improve the environmental performance of the project.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S5.5	Revision of Strategies Plans and Programs	Within 3 months of: (a) the submission of an annual review under condition 3 above; (b) the submission of an incident report under condition 5 below; (c) the submission of an audit report under condition 8 below; and (d) any modifications to this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.	1. Details (list) of all plans updated and reissued during the Audit period			The management plans that were uploaded to the mine website at the time of the audit) were prepared in 2012/13. Variations to the Project Approval had been approved during that time and those modifications are in general not fully reflected in most of the plans. The Auditor has been advised that those plans have now been revised the consultation / approval of those plans has commenced.	**Non-Compliance**	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to reflect changes in the approval, legislative changes and developments in environmental management standards applicable to gold mining operations.
S5.6	Community Consultative Committee	The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary. This CCC must be operating within six months of this approval.	1. Minutes of all CCC meetings held during the Audit Period			Quarterly meetings of the Community Consultative Committee (CCC) are hosted by Hera. Minutes of CCC meetings were sighted . It was stated the CCC operates in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects.	**COMPLIANCE**	
S5.7	Incident Reporting	The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.					**COMPLIANCE**	
S5.8	Regular Reporting	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.	1. http://aureliametals.com/projects/hera-nymagee/reports			The Hera Mine website contains copies of Annual Reviews for 2016, 2017, 2018 and 2019. The website also contains copies of monthly environmental monitoring reports from March 2015 to August 2019.	**COMPLIANCE**	

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
S5.9	Independent Environmental Audit	Within one year of commencement of development on the site under this approval, and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. The audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/ or any assessment, plant or program required under the abovementioned approvals.	1. http://aureliametals.com/projects/hera-nymagee/audits 2. Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW, September 2016.			Copies of the 2013 and 2016 Independent Environmental Audits are available on the Hera Mine Website. The site based elements of the 2016 Independent Environmental Audit were undertaken between 5 and 8 September 2016. The Audit report was finalised and issued to Hera on 13 April 2017. The audit report satisfies the requirements of this Condition.	**COMPLIANCE**	
S5.10		Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	1. Email from Hera (J Thompson) to DPE submitting the 2016 IER	J Thompson : the final 2016 Audit Report was submitted to Hera on 14 March 2017 (start of the 6 week period as this was the date the audit was completed) and it was submitted to DPIE on 18 Apr 2016		The previous IEA Report was submitted within 6 weeks of completion of the audit.	**COMPLIANCE**	
S5.11	Access to Information	Prior to the commencement of construction on the site, the Proponent shall: (a) make copies of the following publicly available on its website: (i) the documents referred to in condition 2 of Schedule 2; (ii) all relevant statutory approvals for the project; (iii) all approved strategies, plans and programs required under the conditions of this approval; (iv) a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; (v) a complaints register, which is to be updated on a monthly basis; (vi) minutes of CCC meetings; (vii) the annual reviews required under this approval; (viii) any independent environmental audit of the project, and the Proponent's response to the	1. http://aureliametals.com/projects/hera-nymagee/			The documents and records required by this Condition have been uploaded to the Hera website, except for the Mining Operations Plan (note that the appendices to that plan have been uploaded.	**Non-Compliance**	Ensure that all required plans (including the current version of the MOP) are loaded on the corporate website.

Project Approval 10_0191								
Condition	**Short Title**	**Condition**	**Document Review**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		recommendations in any audit; (ix) any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.						

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
A1.1	Administrative Conditions	This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2: Construction of an underground gold mine, processing plant, tailings storage facility, and ancillary infrastructure in accordance with Department of Planning project approval 10_0191.					**Noted**	
A1.2		This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. Scheduled Activity Fee Based Activity Scale > 100000 - 500000 T extracted, processed or stored		1. J. Thompson 20 November 2019. The mine has not exceeded the ore processing or concentrate transport limits during the audit period.		The corporate annual reports and Annual Reviews provide a summary of production data for each year. These were: 2017 Financial Year: 368,086 tonnes of ore processed, 32,308 tonnes of concentrate transported from site. 2018 Year: 407,131 tonnes of ore processed, 40,756 tonnes of concentrate transported from site. 2019 Year: 468, 358 tonnes of ore processed, 31,206 tonnes of concentrate transported from site.	**COMPLIANCE**	
A1.3							Not Used	
A2.0		The licence applies to the following premises: Hera Mine Site					**Noted**	
A3.0	Administrative Conditions	This licence applies to all other activities carried on at the premises, including: Chemical Storage, Electricity Generation and Sewage Treatment					**Noted**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
A4.1	Administrative Conditions	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.					**Noted**	
P1.1	Utilisation Areas	The following points referred to in the table (*see Table in EPL on pg 7*) are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.					**Noted**	
P1.2		The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids of liquids to the utilisation area.					**Noted**	
P1.3		The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.					**Noted**	
L2.1	Pollution of Waters	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 20172. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 20183. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019,			The 2016/7 Annual review reported that discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharge occurred on 16 December 2016 and were reported to the DPE, EPA and DRE.	**Non-Compliance**	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.
L2.2	Concentration Limits	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.					**Noted**	
L2.3		To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.					**Noted**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
L2.4		Water and/or Land Concentration Limits (refer to Tables in Condition L2.4)	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.		1. Water monitoring results covering the Audit Period for Licenced Monitoring Points 1,2 ,3 and 4	During the 2019 reporting year on 3 occasions the cyanide destruction circuit failed and cyanide exceeding the licence limit of 10mg/l was discharged to the process water ponds. During the 2018 reporting year concentrations of weak acid dissociable (WAD) cyanide in discharges from Licence Point 1 and Licence Point 2 exceeded limits on a number of occasions. During the 2017 reporting year there were two non-complaint discharges from Point 3. Water quality concentration limit exceedances following heavy storm event. Pumps were set up to empty the sediment basin to reduce the amount of water discharged.	**Non-Compliance**	Review the investigations relating to the WAD Cyanide non-compliances to determine if there are systemic issues in relation to cyanide level management in the process water system.
L3.1	Waste	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence under the Protection of the Environment Operations Act 1997. This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environmental protection licence under the Protection of the Environment Operations Act 1997.	1. *Environmental Management Plan Hazardous Materials*, Version 1.0, dated 9 April 2013.		1. No evidence of off-site waste receival was sighted during the Audit. 2. The mine is remote and not a practical destination for waste disposal.	1. No evidence of off-site waste receival was sighted during the Audit.	**COMPLIANCE**	
L4.1	Noise Limits	Noise generated at the premises must not exceed the noise limits presented in the table below. Locations R1 to R4 in the table L4.1 are those described in the Noise and Vibration Assessment, September 2011, prepared by Spectrum Acoustics Pty Ltd for the Hera Project, via Nymagee, Environmental Assessment. NOTE: Noise generated by the project is to be measured in accordance with conditions L4.2 to L4.6 below.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019.			No noise exceedances were detected over the 2018/9 reporting period. No noise exceedances were detected over the 2017/8 reporting period. No noise exceedances were detected over the 2016/7 reporting period.	**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
L4.2		For the purposes of the conditions of this licence: • Day is defined as the period from 7am to 6pm; and • Evening is defined as the period 6pm to 10pm. Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays. • LAeq(15 minute) is defined as the continuous 'A' weighted sound pressure level-the energy average of the noise measured over a 15 minute period; and • LA1(1 minute) is defined as the sound pressure level exceeded for one percent of a 1 minute measurement period.					**Noted**	
L4.3		The noise limits set out in condition L4.1 apply under all meteorological conditions except for any one ofthe following:a) Wind speeds greater than 3 metres/second at 10 metres above ground level; orb) Stability category G conditions and wind speeds greater than 2 metres/second at 10 metres aboveground level;	1. Plan showing location of all Noise Monitoring Locations2. Noise monitoring reports for the past three years				**Noted**	
L4.4		For the purposes of condition L4.3: a) The meteorological data to be used for determining meteorological conditions is the data recorded by the on-site meteorological weather station at the Hera project site at Nymagee. b) Temperature inversion will be assessed by use of the sigma-theta process as outlined in Appendix E4 of the NSW Industrial Noise Policy (INP).	1. Excel Spreadsheet titled "*Daily Summary (22).csv*". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.			Weather station monitoring results for the Audit Period were sighted by the Auditor. The weather station satisfies the requirements of the Approved Methods for Sampling Air Pollutants in New South Wales Guidelines.	**COMPLIANCE**	
L4.5		For the purposes of determining the noise generated at the premises Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing, must be used.	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The noise monitoring equipment used by Hera's consultants complies with AS IEC61672.1-2004 and AS IEC61672.2-2004 (and current EPA guidelines)	**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
L4.6		To determine compliance: a) With the LAeq(15 minute) noise limits in condition L4.1, the noise monitoring equipment must be located: • within 30 metres of a dwelling façade but not closer than 3 metres where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; • approximately on the boundary where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises; • within approximately 50 metres of the boundary of a National Park or a Nature Reserve. b) With the LA1(1minute) noise limit in ConditionL4.1;the noise monitoring equipment must be located within 1 metre of the dwelling facade. c) The noise monitoring equipment must be located in a position that is: • at the most affected point at a location where there is no dwelling at the location; or • at the most affected point within an area at a location prescribed by conditions L4.6(a)or L4.6(b).	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The sampling locations and sampling procedures used by Hera's noise consultants meet the requirements of the EPL.	**COMPLIANCE**	
L4.7		A breach of this Environment Protection Licence will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition L4.1 is detected: • at a location other than an area prescribed by Conditions L4.6(a) or L4.6(b);and/or • at a point other than the most affected point at a location.					**Noted**	
L4.8		For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The sampling locations and sampling procedures used by Hera's noise consultants meet the requirements of the EPL.	**COMPLIANCE**	
L5.1	Blasting	Blasting condition L5.1 applies to all receiver locations.Blasting overpressure and ground vibration.The proponent must ensure that the blasting on site does not cause exceedances of the criteria in the Table L5.1.Note: Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 20172. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 20183. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	Short Title	Condition	Documents Reviewed	Interviews / Conversations	Inspections / Observations	Assessment	Compliance Finding	Recommendation
L5.2		For the purpose of Condition L5.1: • Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays; • Evening is defined as the period from 6pm to 10pm; and • Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.					**Noted**	
L5.3		Surface Blasting operations at the premises may only take place between 9:00am-5:00pm Monday to Saturday. Surface Blasting is not permitted on Sundays or public holidays. Surface Blasting outside the hours specified can only take place with the written approval of the Environment Protection Authority. Underground Blasting may be undertaken at any time subject to Condition L5.1.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	**Not Triggered**	
L5.4		A breach of the licence will still occur where air blast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in Condition L5.1 at any "noise sensitive locations" other than the locations identified in the above conditions.					**Noted**	
L5.5		The Proponent may exceed the limits in Condition L5.1 if it has a written negotiated blasting agreement with any landowner for higher blasting overpressure and vibration limits, and a copy of the agreement has been forwarded to the EPA.					**Noted**	
L5.6		Air blast overpressure or ground vibration as a result of blasting at the premises must not exceed levels that cause cosmetic or other damage, and in relation to Condition L5.5 only if specifically allowed for in the written agreement between the proponent and the landholder.					**Noted**	
L6.1	Odour	The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises. Note: Section 120 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour. No condition of this licence identifies a potentially offensive odour for the	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register)		1. No offensive odours at or near the site boundaries were detected by the Auditor during the site inspection.	No odour complaints have been received by Hera during the Audit Period.	**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		purposes of Section 120 of the Protection of the Environment Operations Act 1997.						
O1.1	Operating Conditions	Licensed activities must be carried out in a competent manner.This includes:a) the processing, handling, movement and storage of materials and substances used to carry out the activity; andb) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.			1. At the time of the Audit inspection, all elements of the plant were operational, waste storage areas, chemical and fuel storage areas appeared to be well organised and operated.	During the audit, the Auditor did not identify any areas of concern in relation to the general operations and management of the mine.	**COMPLIANCE**	
O2.0	Maintenance	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.		Interview T. Cox Maintenance Supervisor: 1. Pronto (asset and facility management software) is used to plan and track routine maintenance of fixed and moving plant. 2. Hera takes steps to ensure that all the plant and equipment used at the site is maintained in a proper and efficient condition. These steps include: • The mining contractor (PYBAR) is contracted to perform all mining vehicle plant maintenance functions on site and Hera maintains surface plant and equipment; • All equipment on site has to be MDG15 compliant (audit interview); • An equipment maintenance register (sighted for both Hera and PYBAR). • A maintenance schedule system is in place and current for plant (see above). • The concentrate transporter's (KPC Bulk) trucks are under a Maintenance Management	1. Demonstration of Pronto software. The auditor witnessed the processes used to setup, manage and monitor fixed and mobile plant maintenance. 2. Fixed and mobile plant sighted during the audit was operational and appropriately maintained.	The mine operates a popular maintenance management system. Maintenance records sighted (on the Pronto System) demonstrated that a comprehensive proactive maintenance program is in place.	**COMPLIANCE**	

Environment Protection Licence 20179								
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				system with the NHVR (National Heavy Vehicle Register) which requires them to be audited every twelve months.				
O3.0	Dust	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises. All dust control equipment must be operable at all times with the exception of shutdowns required for maintenance. Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas*, Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 5. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However, dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	**Non-Compliance**	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.
O4.1	Bunding	All above ground storage facilities containing flammable and combustible liquids must be bunded in accordance with Australian Standard AS 1940-2004. Sodium Cyanide and other Toxic Chemicals must be stored in accordance with the requirements of AS/NZS 4452 - The Storage and Handling of Toxic Substances.	1. *Environmental Management Plan Hazardous Materials*, Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Hazardous Materials Management Plan*", dated 1 May 2013.		1. All above ground storage bunds facilities inspected during the Audit meet the requirements of AS 1940. Photo #11 shows an example of a chemical storage tank and bund.	Section 5.8 of the HMMP lists the cyanide controls to be used which are consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Code).	**COMPLIANCE**	
O4.2	Stormwater - Construction Phase	A stormwater management scheme must be prepared for all aspects of the construction phase of the development and must be implemented. Implementation of the scheme must mitigate the impacts of stormwater runoff from and within the premises during construction. The scheme should be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the scheme should be consistent with the guidance				No construction works were undertaken during the Audit Period.	**Noted**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		contained in Managing Urban Stormwater: Council Handbook.						
O4.3	Stormwater - Operations Phase	A stormwater management scheme must be prepared for the development and must be implemented. Implementation of the scheme must mitigate the impacts of stormwater runoff from and within the premises following the completion of construction activities. The scheme should be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the scheme should be consistent with the guidance contained in Managing Urban Stormwater: Council Handbook (available from the EPA).	1. Aurelia - Hera Gold WMP Water Management Plan 2016, prepared by GHD. 2. Draft Water Management Plan 2018, Version 6, dated November 2019.			A water management plan has been prepared and implemented at the site. The plan meets the requirements of this Condition.	**COMPLIANCE**	
M1.1	Monitoring Records	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.					**COMPLIANCE**	
M1.2		All records required to be kept by this licence must be:a) in a legible form, or in a form that can readily be reduced to a legible form;	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports.3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain of custody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	**COMPLIANCE**	
		b) kept for at least 4 years after the monitoring or event to which they relate took place; and	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain of custody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	**COMPLIANCE**	
		c) produced in a legible form to any authorised officer of the EPA who asks to see them.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain of custody records, sampling records and laboratory test reports.				**Noted**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
M1.3		The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain of custody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	**COMPLIANCE**	
M2.1	Monitoring Requirements	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns: (table on page 10).	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019. 4. 1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Refer to Conditions M2.2 and M2.3 below.	**Non-Compliance**	Refer to Condition M2.3 below.
M2.2	Air Monitoring Requirements	Point 24 Nitric Oxide, Yearly Method TM-11 Point 39 Nitric Oxide, Yearly Method TM-11	1. Nitric Oxide monitoring results covering the Audit Period: Ektimo Emission Teste Reports, Numbers R002251 (January 2016), R003726 (March 2017), R004870 (October 2017) and R006532 (October 2018).	1. J Thompson: The stack monitoring must be conducted oncer per reporting period. Reporting Period is 18 Mar to 17 Mar hence why two lots of sampling were completed in 2017 calendar year.		The required stack emissions monitoring was undertaken,	**COMPLIANCE**	
M2.3	Water Monitoring Requirements	Refer to Tables in Condition M2.3	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			2018/19: On 5 occasions testing for Weak Acid Dissociable (WAD) Cyanide within the detox circuit when discharging to the tailings storage facility, was not undertaken.	**Non-Compliance**	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
M3.1	Testing Methods	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; orb) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; orc) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	1. Nitric Oxide monitoring results covering the Audit Period: Ektimo Emission Teste Reports, Numbers R002251 (January 2016), R003726 (March 2017), R004870 (October 2017) and R006532 (October 2018).			All laboratory analysis is undertaken by NATA registered laboratories using apporpriate test methods.	**COMPLIANCE**	
M3.2		Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain of custody records, sampling records and laboratory test reports.			All laboratory analysis is undertaken by NATA registered laboratories using apporpriate test methods.	**COMPLIANCE**	
M4.1	Weather Monitoring	The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in the condition below.	1. Excel Spreadsheet titled "*Daily Summary (22).csv*". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019. 2. Environdata Field Calibration Report for the weather station (dated 21/2/2108).			Weather station monitoring results for the Audit Period were sighted by the Auditor.	**COMPLIANCE**	
M4.2		For monitoring point 43 the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.	1. Excel Spreadsheet titled "*Daily Summary (22).csv*". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.			Weather station calibration reports were sighted by the Auditor. Weather station monitoring results for the Audit Period were sighted by the Auditor.	**COMPLIANCE**	
M5.1	Complaints	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			A detailed complaints register is maintained. Note that summary version that does not identify complainant details is located on the complaint website.	**COMPLIANCE**	

Environment Protection Licence 20179								
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M5.2		The record must include details of the following:a) the date and time of the complaint;b) the method by which the complaint was made;c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;d) the nature of the complaint;e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; andf) if no action was taken by the licensee, the reasons why no action was taken.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			A detailed complaints register is maintained. Note that summary version that does not identify complainant details is located on the complaint website. a) The register includes the date and time of the complaint.b) The method by which the complaint was made is recorded e.g. email, telephone, in person.c) The personal details of the complainant such as full name, address and phone number are recorded if provided by the complainant.d) The nature of the complaint is recorded.e) A "Corrective Action" column records the action taken by the licensee in relation to the complaint. Additional columns record the name and position of the person responsible for the corrective actions as well as the date of the corrective action. Follow-up contact is recorded in the "comments" column.f) All complaints sighted (except the test call made as part of the July 2013 compliance audit) have required corrective actions.	**COMPLIANCE**	
M5.3		The record of a complaint must be kept for at least 4 years after the complaint was made.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			The records of complaints date back to 2011.	**COMPLIANCE**	
M5.4		The record must be produced to any authorised officer of the EPA who asks to see them.					**Noted**	
M6.1	Telephone Complaints Line	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.			1. The telephone complaint line number is listed at the site gate and on the site website.	A complaints telephone line was operational at the time of the audit.	**COMPLIANCE**	
M6.2		The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	http://aureliametals.com/projects/hera-nymagee/		1. Mine site signage provides details of the complaints telephone number. Refer to Photo #12.	Details of the complaints phone line number are provided on the company website and is advertised on the signage at the entrance to the mine.	**COMPLIANCE**	
M6.3		The preceding two conditions do not apply until 3 months after the date of the issue of this licence					**Noted**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
R1.1	Annual Returns	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices.	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Annual Returns have been sent to the EPA for each year covered by the Audit Period.	**COMPLIANCE**	
R1.2		An Annual Return must be prepared in respect of each reporting period, except as provided in the below conditions.	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Annual Returns have been sent to the EPA for each year covered by the Audit Period.	**COMPLIANCE**	
R1.3		Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.					**Noted**	
R1.4		Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.					**Noted**	
R1.5		The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			The 2016/7 Annual Return was received by the EPA on 17 May 2019 (61 days after the end of the reporting period). The 2017/8 and 2018/9 Annual Returns were received within 60 days of the end of the reporting periods.	**Non-Compliance**	Ensure that the Annual Returns are received by the EPA within the 60 day period required by the EPL.

Environment Protection Licence 20179								
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R1.6		The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	1. 2016 Annual Return 2. 2017 Annual Return 3. 2018 Annual Return.			Copies of the annual returns are kept on file at Hera.	**COMPLIANCE**	
R1.7		Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.				The Annual Returns are prepared by the Environment Manager and signed by an appopropraite officer of the company.	**COMPLIANCE**	
R2.1	Notification of Environmental Harm	Notifications of Environmental Harm must be made by telephoning the Environment Line service on 131 555.	1. Incident Report to EPA dated 4 January 2017. 2. Email from EPA (Customer Feedback line) to Hera (J Thompson) titled "*04-Jan-2017 Customer Feedback for Call C00136-2017*", dated 22 November 2016. The email acknowledges the telephone report to the Pollution Line. 3. Email from Hera (J Thompson) to the EPA (D Stokes) titled "*Environmental Incident - 26 October 2016"*, dated 22 November 2016. The email refers to the telephone report to the Pollution Line.			A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA.	**COMPLIANCE**	
R2.2		The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	1. Incident Report to EPA dated 4 January 2017.2. Email from EPA (Customer Feedback line) to Hera (J Thompson) titled "*04-Jan-2017 Customer Feedback for Call C00136-2017*", dated 22 November 2016. The email acknowledges the telephone report to the Pollution Line.3. Email from Hera (J Thompson) to the EPA (D Stokes) titled "*Environmental Incident - 26 October 2016"*, dated 22 November 2016. The email refers to the telephone report to the Pollution Line.			A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA.Notifications (incident reports) were provided to the EPA on:- 4 January 2017 (incident 16 December 2016) sediment laden discharge during storm event from Point 3. The incident was reported on 4 January 2017. The delay in reporting related to the time required for off-site sample analysis.	**Non-Compliance**	Hera has submitted the required incident reports to the EPA, however due to delays, usually associated with lab testing, the 7 day reporting requirement has not been met. It is recommended that Hera request a modification to this EPL condition to modify the 7 day written report requirement to provide sufficient time for lab analysis to be completed.
R3.1	Written Report	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or				No requests for reports have been received from the EPA in relation to mobile plant.	**Not Triggered**	
		b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.				No requests for reports have been received from the EPA in relation to mobile plant.	**Not Triggered**	
R3.2		The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.				No requests for reports have been received from the EPA in relation to mobile plant.	**Not Triggered**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
R3.3		The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters					**Noted**	
R3.4		The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified.				No requests for reports have been received from the EPA during the Audit Period.	**Not Triggered**	
R4.1	Fauna Injury or death	The licensee must report any incident of death or injury (including bogging or miring) of fauna (avian and terrestrial) associated with the tailings impoundments or tailings runoff dams by telephoning the EPA's Pollution line on 13 15 55 as soon as the licensee becomes aware of the incident.The licensee must provide written details of the notification with respect of the above condition to the EPA within 7 days of the date which the incident occurred.	1. Incident Report issued to the EPA in relation to a dead goat and a dead kangaroo found in the TSF, dated 17 September 2017.			The EPA was advised following the death of a kangaroo in the TSF in 2017.	**COMPLIANCE**	
G1.1	Copy of Licence	A copy of this licence must be kept at the premises to which the licence applies.				Electronic copy of the licence is maintained by Hera.	**COMPLIANCE**	
G1.2		The licence must be produced to any authorised officer of the EPA who asks to see it.					**Noted**	
G1.3		The licence must be available for inspection by any employee or agent of the licensee working at the premises.				Electronic copy of the licence is maintained by Hera and a copy of the licence has been uploaded to the company website.	**COMPLIANCE**	
G2.1	Signage	Each monitoring and discharge point must be marked by a sign that indicates the EPA point identification number.			1. The Auditor inspected all monitoring points. All licenced points were appropriately sign posted. Refer to Photo #13.		**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
E1.1	Construction of Contaminated Storage Pond	The licensee must construct the proposed contaminated storage pond consistent with the presentation provided to the EPA and dated 26 August 2016, to meet the proposed design capacity for a contaminated structure of a 1 in 100, 72 hour storm event.	1. Letter from Hera (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond*", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J Thompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The contaminated water storage pond has been completed. The pond was sighted by the Auditor	**COMPLIANCE**	
E1.2		The proposed storage pond referred to in Condition E1.1 must be lined to meet the EPA's permeability requirement of 1 x 10-9 m/s or less with a recompacted clay liner of at least 900 mm in thickness (or alternatively geosynthetic liner of equivalence). Where the proposed liner will not meet the required permeability or thickness of at least 900 mm, and the natural geology of the site in conjunction with constructed clay liners is considered sufficient in meeting this requirement, an appropriately qualified person must be engaged to provide sufficient evidence in support of this to demonstrate the construction will meet the requirements outlined above and be adequate to prevent pollution of groundwater.	1. Letter from Hera (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond*", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J Thompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The contaminated water storage pond has been completed. The pond was sighted by the Auditor	**COMPLIANCE**	
E1.3		The licensee must complete the works required by Conditions E1.1 and E1.2 by 30 June 2017 and notify the EPA in writing upon completion of the works.	1. Letter from Hera (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond*", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J Thompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The pond construction was completed within the required timeline.	**COMPLIANCE**	
E1.4		The licensee must submit a report completed by an appropriately qualified person to certify that the contaminated storage pond has been constructed to meet the design specifications referred to in Conditions E1.1 and E1.2. The report must be submitted to the EPA by 11 August 2017.	1. Letter from Hera (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond*", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The report was provided to the EPA on 9 June 2017.	**COMPLIANCE**	

Environment Protection Licence 20179								
Condition	Short Title	Condition	Documents Reviewed	Interviews / Conversations	Inspections / Observations	Assessment	Compliance Finding	Recommendation
			2. Letter from GHD (D Scott) to Hera (J Thompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.					

Mining Lease 1686								
Condition	Short Title	Condition	Documents Reviewed	Interviews / Conversations	Inspections / Observations	Assessment	Compliance Finding	Recommendation
1 (a)	Notice to Landholders	Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice.	1. *Independent Environmental Audit, Hera Resources Pty ltd*, Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**	
1 (b)		If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.	1. *Independent Environmental Audit, Hera Resources Pty ltd*, Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**	
2(a)	Environmental Harm	The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any activities under this lease.	1. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1580504, dated13 June 2019. 2. EPA Clean-up Notice 157818.			As a result of two (self-reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	**Non-Compliance**	The clean-up actions relating to the incidents have been completed - there are no further actions required.

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
2(b)		For the purposes of this condition: (i) environment means components of the earth, including: (A) land, air and water, and (B) any layer of the atmosphere, and (C) any organic or inorganic matter and any living organism, and (D) human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in paragraphs (A)-(C). (ii) harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution, contributes to the extinction or degradation of any threatened species, populations or ecological communities and their habitats and causes impacts to places, objects and features of significance to Aboriginal people.					**Noted**	
3(a)	Mining Operations Plan	Mining operations must not be carried out otherwise than in accordance with a Mining Operations Plan (MOP) which has been approved by the Director-General	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. *2.* Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP", dated 27 February 2017.*			The MOP has been prepared and approved by DRE.	**COMPLIANCE**	
3(b)		The MOP must: (i) identify areas that will be disturbed by mining operations;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			Section 2.2 (Asset Register) describes the mine in terms of "Domains". Each of the Domains describe the areas of the site that are likely to be disturbed and therefore would be subject to rehabilitation in the future.	**COMPLIANCE**	
		(ii) detail the staging of specific mining operations;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			Section 2 of the MOP describes the proposed mining activities and includes descriptions of the exploration, construction and mining phases of the project.	**COMPLIANCE**	
		(iii) identify how the mine will be managed to allow mine closure;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			Section 2.3.9 of the MOP describes the progressive rehabilitation and closure of the site.	**COMPLIANCE**	
		(iv) identify how mining operations will be carried out in order to prevent and or minimise harm to the environment;	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			Section 3 of the MOP describes the environmental risks associated with the project and Section 3.2 describes how those risks will me mitigated.	**COMPLIANCE**	
		(v) reflect the conditions of approval under: • the Environmental Planning and Assessment Act 1979 • the Protection of the Environment Operations Act 1997 • and any other approvals relevant to the development including the conditions of this lease; and	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017.			The MOP is consistent with the Planning Approval and this Mining Lease.	**COMPLIANCE**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		• have regard to any relevant guidelines adopted by the Director-General.						
3(c)		The leaseholder may apply to the Director-General to amend an approved MOP at anytime					**Noted**	
3(d)		It is not a breach of this condition if: (i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the Mining Act 1992, the Environmental Planning and Assessment Act 1979, Protection of the Environment Operations Act 1997, Mine Health and Safety Act 2004 I Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 I Coal Mine Health and Safety Regulation 2006 or the Occupational Health and Safety Act 2000; and (ii) the Director-General had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.					**Noted**	
3(e)		A MOP ceases to have effect 7 years after date of approval or other such period as identified by the Director-General					**Not Triggered**	
4(a)	Environmental Management Report	The lease holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise directed by the Director-General	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 *3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			The Annual Reviews (prescribed in the Planning Approval) are accepted as fulfilling the requirements of this Condition for the preparation of Annual Environmental Management Reports (AEMR). Annual Reports have been prepared and submitted each year covered by the Audit Period.	**COMPLIANCE**	
4(b)		The EMR must: (i) report against compliance with the MOP;	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			All Annual Reviews refer back to statements made in the MOP and state if they were in accordance with MOP and if not, why not.	**COMPLIANCE**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		(ii) report on progress in respect of rehabilitation completion criteria;	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			The progress of rehabilitation against the plans in the MOP are reported in each of the Annual Reviews. See for example Section 8 of the 2018/19 AR.	**COMPLIANCE**	
		(iii) report on the extent of compliance with regulatory requirements; and	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 *3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			Section 6 of the (2018/19) Annual Review detailed performance against the environmental compliance obligations established under the Planning Approval and EPL.	**COMPLIANCE**	
		(iv) have regard to any relevant guidelines adopted by the Director-General	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 20172. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 20183. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.				**Noted**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
5(a)	Environmental Incident Report	The lease holder must report any environmental incidents. The report must: (i) be prepared according to any relevant Departmental guidelines; (ii) be submitted within 24 hours of the environmental incident occurring	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC. 2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC. 3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC. 4. Notice of HVAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC. 5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC. 6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC.. 7. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 9. Notice of WAD exceedance and incident report - (20 September 2017) sent to DPE, DRE, EPA..			The Auditor has reviewed the reported environmental incidents and licence exceedances (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates that all exceedances were reported to DPE, DRE, EPA and where required to Council.	**COMPLIANCE**	
5(b)		For the purposes of this condition, environmental incident includes: (i) any incident causing or threatening material harm to the environment (ii) any breach of Conditions 1 to 9 and 11 to 24; (iii) any breach of environment protection legislation; or, (iv) a serious complaint from landholders or the public.					**Noted**	
5(c)		For the purposes of this condition, harm to the environment is material if: (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, where loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.					**Noted**	
6	Additional Environmental Reports	Additional environmental reports may be required from time to time as directed in writing by the Director-General and must be lodged as instructed.		J Thompson: no reports have been required by DRE over the Audit Period.		DRE did not request any reports over the Audit Period.	**Not Triggered**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
7	Rehabilitation	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	1. *Mining Operations Plan for the Hera Mine PA10_0191*, dated January 2017. 2. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP*", dated 27 February 2017.			The MOP (and therefore the Rehabilitation Management Plan has been reviewed and approved by DRE. Progressive rehabilitation has commenced on the mine site.	**COMPLIANCE**	
8		Not Used					Not Used	
9	Working Requirement	The lease holder must:(a) ensure that at least 52 competent people are efficiently employed in relation to the mining process or mining operations on the lease areaOR(b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than $910,000.00 per annum whilst the lease is in force.The Minister may at any time or times, by instrument in writing served on the lease holder, increase or decrease the expenditure required or the number of people to be employed	1. Aurelia Metals Limited 2017 Annual Report2. Aurelia Metals Limited 2018 Annual Report			The Annual (Board) Reports published by Aurelia Resources confirm that the annual expenditure at the mine is in excess of $910,000 per annum.	**COMPLIANCE**	
10(a)	Blasting	Ground Vibration The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises as the case may be, unless determined otherwise by the Department of Environment, Climate Change and Water.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**	
10(b)		The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Environment, Climate Change and Water.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**	
11	Safety	Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately	1. Incident Register	1. Audit interview (J Thompson): no damage to private property or livestock has occurred as		No damage to private property or livestock has occurred as a result of the blasting undertaken.	**COMPLIANCE**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
		protected, to the satisfaction of the Director-General, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be notified in writing to the Department and filled in or otherwise rendered safe to a standard acceptable to the Director-General.		a result of the blasting undertaken.				
12	Prevention of soil erosion and pollution	Prospecting operations must be carried out in a manner that does not cause or aggravate air pollution, water (including groundwater) pollution, soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan	1. *Aurelia - Hera Gold WMP Water Management Plan 2016*, prepared by GHD. 2. *Draft Water Management Plan 2018*, Version 6, dated November 2019.		1. No areas of soil erosion were observed during the Audit.	A surface water management plan has been prepared and implemented at the Mine. There was no evidence of erosion problems observed by the auditor.	**COMPLIANCE**	
13	Transmission Lines (etc)	Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Director-General and subject to any conditions stipulated	1. incident Register	1.Interview J Thompson, 19 November 2019. No requests have been received requesting repairs be made to any public infrastructure.		No instances of damage to public infrastructure have been identified for the Audit Period.	**Not Triggered**	
14(a)	Roads and Tracks	The lease holder must pay to the relevant roads authority in control of the road or track the reasonable costs incurred by the roads authority in making good any damage to roads or tracks caused by operations carried out under this lease less any amount paid or payable from the Mine Subsidence Compensation Fund	1. Council accounts database extracts: 31/7/2015 - $10,000 14/06/2018 - $82,500 18/1/2018 - $22,000 13/10/2017 - $43,500	1. Interview L Richards. The road related payments made to Council consist of:$82,500 – Hera's contribution to the Hermidale-Nymagee sealing road project in 2018$22,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2017/18 annual contribution)$43,500 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions)$10,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions once grading was completed)	1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Payments have been made to BSC during the audit period totalling $158,000 for road maintenance.	**COMPLIANCE**	
14(b)		During wet weather the use of any road or track must be restricted so as to prevent damage to the road or track.	1. *Aurelia - Hera Gold WMP Water Management Plan 2016*, prepared by GHD. 2. *Draft Water Management Plan 2018*, Version 6, dated November 2019.	1.Interview L. Richards, 19 November 2019. Where required tracks around the site are closed during wet weather.		Drought conditions experienced over the Audit Period have resulted in no erosion issues being experienced.	**COMPLIANCE**	
14(c)		Existing access tracks should be used for all operations where reasonably practicable. New access tracks must be kept to a minimum and be positioned in order to minimise damage to the land, watercourses or vegetation					**Noted**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
14(d)		Temporary access tracks must be rehabilitated and revegetated to the satisfaction of the Director-General as soon as reasonably practicable after they are no longer required under this lease.	1. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. 2. Letter from the DRE (to Hera (J Simpson), titled "Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP", dated 27 February 2017.			The MOP (and therefore the Rehabilitation Management Plan has been reviewed and approved by DRE. Progressive rehabilitation has commenced on the mine site.	**COMPLIANCE**	
15(a)	Trees and Vegetation	The lease holder must not fell trees, strip bark or cut timber on any land subject of this lease without the consent of the landholder who is entitled to the use of the timber.		1.Interview L. Richards, 19 November 2019. No works have been required on any neighbours properties.		No works have been undertaken on neighbouring properties during the Audit Period.	**Not Triggered**	
15(b)		The lease holder must contact Forests NSW and obtain any required permit, licence or approval before taking timber from any Crown land within the lease area.		1. J Thompson: No timber has been taken from lease areas		No timber has been taken from lease areas.	**Not Triggered**	
16		Not Used					Not Used	
17(a)	Resource Recovery	Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any time the Director-General is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, notice in writing to the lease holder may be given requiring the holder to recover such minerals.	1. Notices from DPI relating to any aspect of the mining operations				**Noted**	
17(b)		The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery	1. Notices from DPI relating to any aspect of the mining operations				**Noted**	
17(c)		The lease holder must, when requested by the Director-General, provide such information as the Director-General may specify about the recovery of the mineral resources of the lease area		1. J Thompson: DRE has not served any notices relating to the mining operations (requiring the provision of a report)		DRE has not served any notices on or required any reports from Hera over the Audit Period.	**Not Triggered**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
18	Indemnity	The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which ma. be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do	Noted				**Noted**	
19(a)	Security	This authorisation is subject to a condition that the holder of the authorisation is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the authorisation, including obligations of all or any kind under the authorisation that may arise in the future	Noted				**Noted**	
19(b)		The amount of the security deposit to be provided has been assessed by the Director General of the Department of Trade and Investment, Regional Infrastructure and Services at $2,470,000.00	1. Deed of Security Bond (Westpac) for the sum of $2,933,000 in favour of the Department of Industry, Skills, and Regional Development.			The required bond has been established.	**COMPLIANCE**	
19(c)		The security deposit is to be provided by way of a cash deposit (with no entitlement to any interest thereon) or in such other form as may be approved by the Director General (or their delegate).	1. Deed of Security Bond (Westpac) for the sum of $2,933,000 in favour of the Department of Industry, Skills, and Regional Development.			The required bond has been established.	**COMPLIANCE**	
20		Not Used					Not Used	
21		Not Used					Not Used	
22(a)	Prescribed Dam	Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the proposed tailings storage area without the prior written approval of the Minister and subject to any conditions stipulated			1. No evidence of mining outside of the lease area was observed by the Auditor.	All mining is being undertaken within the lease area.	**COMPLIANCE**	
22(b)		Where the lease holder desires to mine within the notification area he or she must: (i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and (ii) provide such information as the Minister may direct	1. Correspondence requesting approval to mine within the notification area.				**Noted**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
22(c)		The Minister must not, except in the circumstances set out in sub-paragraph (ii),grant approval unless sub-paragraph (i) of this paragraph has been complied with. This sub-paragraph is complied with if:(i) the Dams Safety Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b).(ii) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined.(iii) the Director-General has complied with any reasonable request made by the Dams Safety Committee or the owner of the dam for further information in connection with the mining proposal.(iv) the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and(v) where the Dams Safety Committee has made recommendations the approval is in terms that are in accordance with those recommendations; or where the Minister does not accept those recommendations or any of them - in accordance with a determination under subparagraph (ii) of this paragraph.(vi) Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam: as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978; or in the event of failure to reach such agreement - as determined by the Premier.	Noted				**Noted**	
22(d)		The Minister, on notice from the Dams Safety Committee, may at any time or times: (i) cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given. (ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed	Noted				**Noted**	
23	Suspension of Mining Operations	The holder of a mining lease may not suspend mining operations in the mining area other than in accordance with the consent of the Minister	Not Triggered				**Noted**	

Mining Lease 1686								
Condition	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**
24	Cooperation Agreement	The lease holder must make every reasonable attempt, and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts and • rehabilitation issues.				There are no overlapping mining titles related to this Project.	**Not Triggered**	

Audit Photos

Appendix B



Photo # 1- Molasses Spray Truck

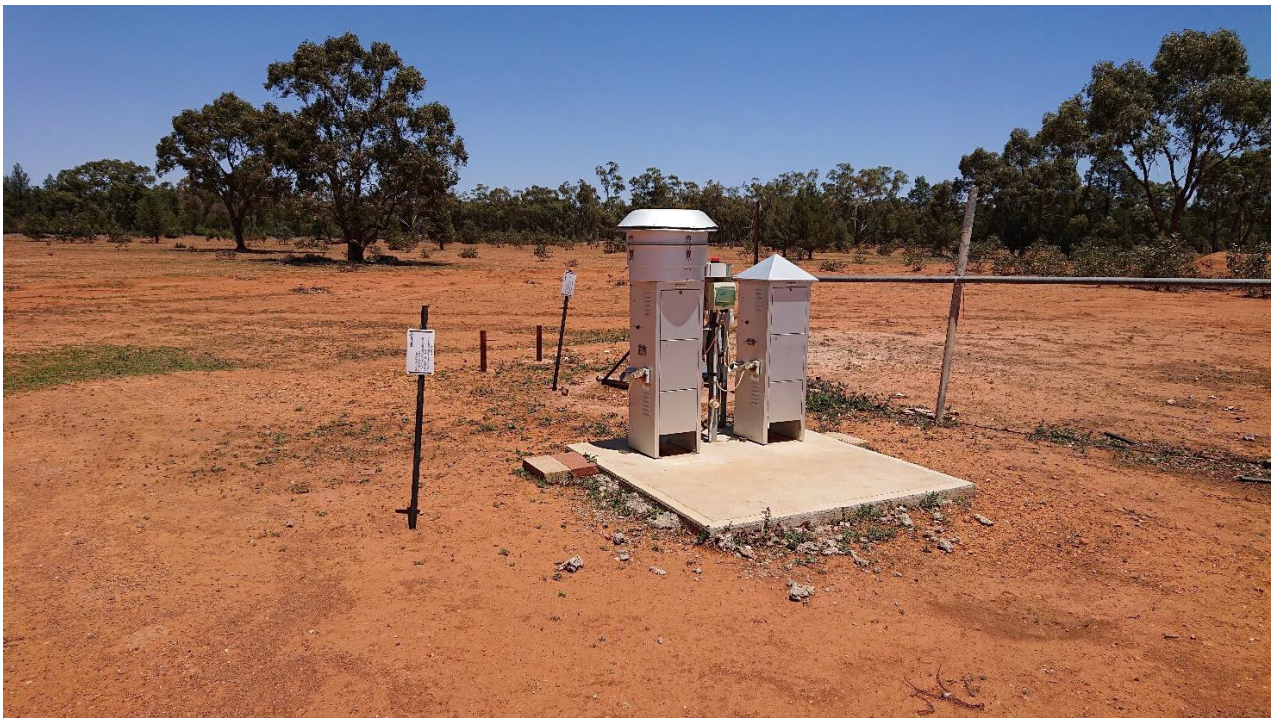


Photo # 2- HVAS Sampler



Photo # 3 - Meteorological Station



Photo # 4 - Process Water Management System



Photo # 6 - Tailings Storage Facility



Photo # 5 - TSF Clean Water Diversion



Photo # 7 - Light Vehicle Access Intersection



Photo # 8 - Cyanide Unloading and Storage Facility



Photo # 10 - Waste Oil Storage



Photo # 9 - Waste Storage Area Signage



Photo # 11 - Sodium Hydroxide Storage Tank and Bund



Photo # 12 - Signage at site entrance



Photo # 13 - EPL Monitoring Point Signage

DPIE Auditor Approval

Appendix C

Contact: Katrina O'Reilly
Phone: 02 62297909
Email: Katrina.oreilly@planning.nsw.gov.au

Mark Williams
Senior Environment Advisor
Hera Mine
Aurelia Metals Ltd
PO Box 8626
ORANGE NSW 2800

Email:mark.williams@aureliametals.com.au

19 September 2019

Dear Mark,

Hera Mine PA 10_0191
Independent Environmental Audit

I refer to your letters dated 20 August 2019 and 14 September 2019 seeking the Secretary's endorsement for the audit team to undertake the Independent Environmental Audit (audit) as required under Condition 9 of Schedule 5 of Project Approval 10_0191 as modified (the approval) for the Hera Mine.

Having considered the qualifications and experience of the audit team, namely;

- Dr Ken Holmes (Barnett & May) as Lead Auditor;
- Mr Adam Bishop (Pitt and Sherry) as technical specialist (surface water management);
- Mr Martin Jacobs (Pitt and Sherry) as technical specialist (hydrology and water modelling)

the Secretary endorses the appointment of this team to undertake the audit in accordance with Condition 9 of Schedule 5 of the approval. This approval is conditional on the audit team being independent of the development.

The audit is to be conducted in accordance with the approval condition, AS/NZS ISO 19011 Australian/New Zealand Standard: Guidelines for quality and/or environmental management systems. Auditors may wish to have regard the IAPAR. A copy of the requirements can be located at https://www.planning.nsw.gov.au/Assess-and-Regulate/About-compliance/Compliance-policy-and-guidelines/Independent-audit-post-approval-requirements.

The audit report is to:

- Include consultation with relevant agencies;
- include a compliance table indicating the compliance status of each condition of approval and any relevant EPL;

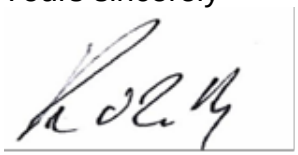
- not use the term “partial compliance”;
- recommend actions in response to non-compliances;
- review the adequacy of plans and programs required under this approval; and
- identify opportunities for improved environmental management and performance.

Within 6 weeks of completing the audit, or otherwise as agreed by the Secretary, in accordance with Condition 10 Schedule 5, Hera Mine is to submit a copy of the audit report to the Secretary together with its response to any recommendations contained in the audit report and a timetable to implement the recommendations.

Prior to submitting the audit report to the Secretary, it is recommended that Hera Mine review the report to ensure it complies with the relevant approval condition.

Should you wish to discuss this matter please contact myself on the details above.

Yours sincerely



Katrina O’Reilly
Team Leader Compliance
as nominee for the Secretary

Condition	Short Title	Condition	Document Review	Interviews / Conversations	Inspections / Observations	Assessment	Compliance Finding	Recommendation	Hera Resources Action Plan	Hera Action Due Date
S2.1		The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any **material harm** to the environment that may result from the construction, operation or rehabilitation of the project.	1. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1580504, dated13 June 2019. 2. EPA Cleanup Notice 157818.			As a result of two (self reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	**Non-Compliance**	The cleanup actions relating to the incidents have been completed - there are no further actions required.	PA Observation 1 - Noted.	Complete.
S2.2	Terms of Approval	The Proponent shall carry out the project generally in accordance with the: (a) EA; and (b) conditions of this approval.	1. Email from S.Heinrich (Senior Surveyor) to M Williams (Senior Environmental Advisor) titled *"Waste Pad Over Height"* , dated 3 May 2019. The email notified the Environmental Advisor that the survey of the stockpile had confirmed that the stockpile height had been exceeded.	1. J. Thompson 29 November 2019. An exceedance in stockpile height occurred in May 2019.	1. The stockpile is not visible from any adjacent properties or public roads.	During the Audit period, the Waste Rock stockpile height exceeded the 10m height limit. The Auditor notes that the proposed Modification 5 seeks to increase the Waste Rock stockpile height to 15m. It is the Auditor's view that an increase in stockpile height will not result in an additional impact on the environment.	**Non-Compliance**	Ensure that the waste rock dump height is maintained below the approved height.	1. The new approved WRE height has been increased to 15m above ground level and was approved in MOD5, which was approved on 6 December 2019. 2. The current height of the WRE continues to be reduced as waste rock is used to backfill empty stopes.	Complete.
S2.3		If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, this conditions of this approval shall prevail to the extent of any inconsistency.					**Noted**			
S2.4		The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval;and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	1. Correspondence related to an exceedance of the bench heights of the tailing storage facility (in early 2016) and subsequent correspondence with DPE indicating that the issue had been dealt with. This correspondence related to an incident in 2016. No further records of directions from DPIE were identified.	1. J. Thompson 29 November 2019. No directions were received from DPIE during the audit period.		No directions for action (to be taken) were found relating to directions from DPE	**Not Triggered**			
S2.5	Mining Operations	The Proponent may carry out Mining operations on the site until 31 December 2022.				Administrative Statement	**Noted**			
S2.6	Ore Extraction and Processing	The Proponent shall not: (a) process more than 505,000 tonnes of ore from the site in any calendar year. (b) transport more than 50,000 tonnes of concentrate from the site in any calendar year.	1. Aurelia Metals Limited 2017 AnnualReport 2. Aurelia Metals Limited 2018 AnnualReport 3. Hera Annual Review 2019	1. J. Thompson 20 November 2019. The mine has not exceeded the ore processing or concentrate transport limits during the audit period.		The corporate annual reports and Annual Reviews provide a summary of production data for each year. These were: 2017 Financial Year: 368,086 tonnes of ore processed, 32,308 tonnes of concentrate transported from site. 2018 Year: 407,131 tonnes of ore processed, 40,756 tonnes of concentrate transported from site. 2019 Year: 468, 358 tonnes of ore processed, 31,206 tonnes of concentrate transported from site.	**COMPLIANCE**			
S2.7	Hours of Operation	The Proponent shall comply with the operating hours: (a) Vegetation Clearing: 7am to 6pm , 7 days aweek (b) Construction: 24 hours, 7 days a week (c) Mining, maintenance and processing: 24 hours, 7 days a week (d) Rehabilitation: Day /Evening (e) Transportation of Concentrate and Gold Ore: 7am to 10pm , 7 days a week.	1. Letter to DPIE from J Thompson, dated 7 December 2017 notifying DPIE of two non-compliances: a) 29 September 2017 concentrate truck departed site at 0600 b) 28 November 2017 weak acid dissociable (WAD) cyanide discharge to the SF exceeded licence conditions 2. Driver Training and / or Induction Materials 3. Complaints Register (uploaded to the Hera website).	1.Interview J Thompson, 19 November 2019. Hera has complied with the operating hours specified in the Approval except for one instance where a concentrate truck departed the site prior to 7am. Specifically: -No significant vegetation clearing has occurred during the Audit Period -No construction works have been undertaken during the Audit Period -No rehabilitation works have been undertaken on any area of the site -Transportation of concentrate has be confined to daylight hours.		One non-compliance (concentrate truck departure at 0600) occurred during the Audit Period. No complaints relating to out of hours works (including truck movements to and from site) are recorded on the complaints register that has been uploaded to the Hera website. The Drivers Code of Conduct includes the requirement that no concentrate transport should occur outside of daylight hours (specifically 0700 to 1930).	**Non-Compliance**	No action required, the drivers code of conduct is up to date.	PA Observation 2 - Noted.	Complete.
S2.8	Structural Adequacy	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	Plant and associated facilities Construction Certificates -CC 379/2013 issued 16 April 2013 -CC 20130148 issued 2 October 2013 -CC 17.2/2014 issued 20 March 2014 -CC 17.3/2014 issued 4 April 2014 Plant and associated facilities Occupation Certificates -OC 20130148 issued 28 January 2014 -OC 379.1/2013 issued 3 March 2014 -OC 17/2014 issued 6 July 2017 -OC 358/2017 issued 25 August 2017 Tailings Storage Facility - Tailings Storage Facility Design Report (MWP00768AA-AC Design Rep FS Rev0) -Dam Safety Committee TSF Surveillance Report issued 14 April 2016 -Letter from Dam Safety Committee dated 16 July 2014 confirming acceptance of the Stage 1 Construction report for the TSF. Other -Johnson Explosives letter dated 27 August 2012 confirming compliance of the Explosives Magazine with AS2187.1 -Structural Condition Assessment (transportable Buildings) prepared by Geolyse, dated December 2017 - Building Certificate issued by CSC (related to office building and ablution blocks) dated 21 February 2018.	1. J. Thompson 20 November 2019. no new construction works have been undertaken during the audit period.		The present processing plant, workshops and associated office facilities were constructed prior to this Project Approval and were approved by the DPI in 2006 under Part 5 of the EP&A Act 1979. No new construction works were undertaken during the audit period. However the previous audit failed to cover approval of the TSF and therefore the Auditor has reassessed the compliance against this condition covering the current and previous Audit Periods.. Note that the previous audit recorded a Non-Compliance against this condition. The review of the construction documentation undertaken during this audit has found that sufficient documentation has been retained by Hera to demonstrate that appropriate quality assurance measures were implemented during construction works and the required CCs and OCs have been obtained. Approval under the Dams Safety Act for the TSF have been obtained.	**COMPLIANCE**			
S2.9	Demolition	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	1. Records of demolition 2. Contracts / specifications for demolition works	1.Interview L. Richards, 19 November 2019. No demolition works were undertaken during the Audit Period. A decommissioned crusher is awaiting demolition.		No demolition works have been undertaken during the audit period.	**Not Triggered**			
S2.10	Protection of Public Infrastructure	The Proponent shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure damaged by the project; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure.	1. incident Register	1.Interview J Thompson, 19 November 2019. No requests have been received requesting repairs be made to any public infrastructure.		No instances of damage to public infrastructure have been identified for the Audit Period.	**Not Triggered**			
S2.11	Operation of Plant and Equipment	The Proponent shall ensure that all plant and equipment used at the site, or to transport extractive materials from the site, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.		Interview T. Cox Maintenance Supervisor: 1. Pronto (asset and facility management software) is used to plan and track routine maintenance of fixed and moving plant. 2. Hera takes steps to ensure that all the plant and equipment used at the site is maintained in a proper and efficient condition. These steps include: -The mining contractor (PYBAR) is contracted to perform all mining vehicle plant maintenance functions on site and Hera maintains surface plant and equipment; -All equipment on site has to be MDG15 compliant (audit interview); -An equipment maintenance register (sighted for both Hera and PYBAR); -A maintenance schedule system is in place and current for plant (see above). -The concentrate transporter's (KPC Bulk) trucks are under a Maintenance Management system with the NHVR (National Heavy Vehicle Register) which requires them to be audited every twelve months.	1. Demonstration of Pronto software. The auditor witnessed the processes used to setup, manage and monitor fixed and mobile plant maintenance. 2. Fixed and mobile plant sighted during the audit was operational and appropriately maintained.	The mine operates a popular maintenance management system. Maintenance records sighted (on the Pronto System) demonstrated that a comprehensive proactive maintenance program is in place.	**COMPLIANCE**			
S2.12	Staged Submission of Plans and Programs	With the approval of the Director-General, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis.	Correspondence from DPIE approving staging of any plans or programs	1.Interview L. Richards. There are no plans to submit any strategy, plan or program required by this approval on a progressive basis at this stage		This condition has not been triggered.	**Not Triggered**			
S2.13		Until they are replaced by an equivalent strategy, plan or program approved under this approval, the Proponent shall implement the existing strategies, plans or programs for the site that have been approved under the approved exploration activities described in Review of Environmental Effects entitled "Exploration Decline at the Hera Deposit within Exploration Licence 6162".	1. Review of Environmental Effects entitled "Exploration Decline at the Hera Deposit within Exploration Licence 6162".	The Environmental Management Strategy has been approved. The only plans that have not been approved since project inception are the Water Management Plan and Biodiversity Management Plan. The draft plans are substantially the same as the documents included in the REF. Therefore, Hera is operating in general accordance with the Review of Environmental Factors (REF) for the Exploration Decline.		The Environmental Management Strategy and related sub-plans required by this Approval have been drafted. All of the plans are not up to date and / or approved (by DPIE). The unapproved plans are being implemented as opposed to the plans provided in the REF. The management plans that are loaded onto the company website are assumed to be those that are current and being implemented. The majority of those plans were prepared in 2012/13 and may no longer provide up to date process information or mitigation measures relevant to the current operations. Each of the Plans has been reviewed by the Auditor and while generally technically sufficient contain some inaccurate information, for example regulatory references.	**Non-Compliance**	Review and update all plans required under the EMS, consult with the relevant authorities and then seek DPIE approval for the revised plans.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
S2.14	Planning Agreement	By 31 July 2016 unless otherwise agreed by the Secretary, the Proponent shall amend the planning agreement with CSC, in accordance with Division 6 of Part 4 of the EP&A Act, which provides for contributions to CSC. The terms of the planning agreement shall be consistent with the general terms of agreement between CSC and Hera Resources Pty Limited outlined in Appendix 2.	1. Deed of Variation of Original Planning Agreement between Cobar Shire Council and Hera Resources Pty Ltd, 10 April 2013. 2. Email from Cobar Shire Council (S Pruiter) to DPE (E Donnelley) titled *"Modification of Planning Agreement - Condition No.14 of the third modified consent"* , dated 22 September 2016. The email confirms the execution of the deed of variation and compliance with Condition S2 C14 of the Approval. 3. Tax Invoice issued by Cobar Shire Council on 3 May 2018 for the voluntary Planning Agreement Contributions of $32,672 and $61,260)			Hera entered into a planning agreement with Cobar Shire Council (CSC) in accordance with Division 6 of Part 4 of the EP&A Act. Schedule 1 in the original planning agreement. The terms of the planning agreement are consistent with the general terms of agreement between CSC and Hera outlined in Appendix 2. The total contributions of $60,000 for road repair and maintenance contribution and $32,000 for the community fund contribution listed in Appendix 2 are the same as the total contributions listed in Schedule A of the planning agreement.	**COMPLIANCE**			
S2.15	Road Maintenance Contribution	By 30 September 2015, and annually thereafter until the cessation of transport operations, the Proponent shall make annual contributions of $20,000 to BSC for the maintenance of the unsealed sections of Nymagee-Hermidale Road.	1. Council accounts database extracts: 31/7/2015 - $10,000 14/06/2018 - $82,500 18/1/2018 - $22,000 13/10/2017 - $43,500	1. Interview L Richards. The road related payments made to Council consist of: $82,500 – Hera's contribution to the Hermidale-Nymagee sealing road project in 2018 $22,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2017/18 annual contribution) $43,500 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions) $10,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions once grading was completed)	1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Payments have been made to BSC during the audit period totalling $158,000 for road maintenance.	**COMPLIANCE**			
S3.1	Noise Criteria	The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land. Table 2: Noise Criteria dB(A) Receivers: All residential receivers Day : (LAeq(15-minute)) - 35 Evening(LAeq(15-minute)) - 35 Night (LAeq(15-minute)) - 35 / (LA1(max)) - 45 Note: Noise generated by the project is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. However, these criteria do not apply if the Proponent has an agreement with the relevant owner(s) to exceed the criteria.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017* ; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			No noise exceedances were detected over the 2018/9 reporting period. No noise exceedances were detected over the 2017/8 reporting period. No noise exceedances were detected over the 2016/7 reporting period.	**COMPLIANCE**			

S3.2	Operating Conditions	The Proponent shall: (a) implement best practice noise management to minimise the construction, operational and traffic noise of the project.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register) *2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017 ;* dated 14 August 2017 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018 ;* dated 16 August 2018 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019 ;* dated 14 August 2019.			Two noise complaints were received over the Audit Period relating noise (from the same complainant, one via the EPA). The complaints were investigated by Hera and responses provided to the Complainant. No noise exceedances were detected over the Audit Period.	COMPLIANCE			
		(b) maintain the effectiveness of any noise suppression equipment on site at all times and ensure defective equipment is not used operationally until fully repaired; and		1. Interview T Cox Maintenance Supervisor: Hera manage maintenance requests through the Pronto system. Routine maintenance program is managed using a manual (spreadsheet based) system.	1. The Auditor did not identify an maintenance issues during the site inspection. All equipment sighted appeared to be operational and appropriately maintained.	An effective maintenance system has been developed and implemented.	COMPLIANCE			
		(c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register) *2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017 ;* dated 14 August 2017 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018 ;* dated 16 August 2018 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019 ;* dated 14 August 2019.			Two noise complaints were received over the Audit Period relating noise (from the same complainant, one via the EPA). The complaints were investigated by Hera and responses provided to the Complainant. No noise exceedances were detected over the Audit Period.	COMPLIANCE			
S3.3	Noise Management Plan	The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. The plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval within six months of this approval;	1. *YTC Resources Ltd, Environmental Management Plan Noise Management, Revision 5* , dated 19 August 2013. 2. *Draft Noise Management Plan* Version 1.0 / Revision 6, dated 24/11/2017. 3. Email from DPE (S Shoesmith) to Hera (J Thompson) titled "FW: *Hera Noise Management Plan* ", dated 26 June 2018. This email provided three (minor) comments on the contents of the plan. 2. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "Hera Project (MP 10_0191) Management Plan Approvals", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans. NOTE this approval predates the current version of the Noise Management Plan.	J Thompson: Please note, the approval letter is dated the 28/9/12. The Document Control table on the first page of the Noise Management Plan that a review of the document was completed in 2013 and no changes were made. Therefore, the 2013 version is the same as the 2012 version and has been approved by DPIE; Unfortunately I am unable to locate the correspondence documentation between EPA and Hera in 2012. However, as this was approved by DPIE this correspondence must have been provided to DPIE at the time of approval.		A noise management plan has been prepared, the version on the Hera website is the 2013 update. No correspondence was available to verify that this plan was approved by DPE or that the EPA was consulted during preparation of the Plan. Finding: NOT VERIFIED NOTE: the Auditor assumes that the 2013 version of the NMP is the current version. Email correspondence from 2017/18 indicates that an updated to that plan was prepared and sent to DPE for review in 2017. DPE provided comment on the plan, however the plan has not been approved by DPE. No correspondence was sighted the confirmed that the EPA was consulted during the preparation of the 2017 Noise Management Plan update.	Non-Compliance	Review the 2017 version of the NMP to ensure it up to date then, consult with DPIE and EPA and then seek DPE approval for the revised plan.	Consultation has been received and the NMP was submitted to DPE for approval on 14 March 2019.	Complete.
		(b) describe the measures that would be implemented to ensure compliance with conditions 1 and 2 of this schedule; and	1. *YTC Resources Ltd, Environmental Management Plan Noise Management* , Revision 5, dated 19 August 2013.			Section 5 of the NMP describes the measures to be implemented to ensure compliance.	COMPLIANCE			
		(c) include a monitoring program that: (i) adequately supports the noise management system on site; (ii) includes a protocol for determining exceedances of the criteria identified in Table 2; and (iii) evaluates and reports on the effectiveness of the noise management system on site.	1. *YTC Resources Ltd, Environmental Management Plan Noise Management* , Revision 5, dated 19 August 2013.	J Thompson: Four properties have been identified in the Management Plan. Refer to Figure 3. The reason only 3 monitoring locations have been identified is that R1 and R2 are monitored from the same location. This is in accordance with advice we have received from noise specialists (report attached outlining this advice).		Section 6 of the NMP describes the monitoring that will be undertaken to assess compliance. Section 6.1.2 (Table 6) lists the noise monitoring locations at which quarterly monitoring will be undertaken. Four properties are identified.	COMPLIANCE			
S3.4	Blasting Criteria	The Proponent shall ensure that blasting on the site does not cause exceedances of the criteria in Table 3.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017 ;* dated 14 August 2017 *2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018 ;* dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties..	COMPLIANCE			
S3.5	Blasting Hours	The Proponent shall only carry out above ground blasting on site between 9:00am and 5:00pm Monday to Saturday, inclusive. No above ground blasting is allowed on Sundays, public holidays or at any other time without the written approval of the Secretary.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	Not Triggered			
S3.6		Underground blasting may be undertaken at any time, subject to compliance with the conditions of this approval.					Noted			
S3.7	Blasting Frequency	In relation to above ground blasting, the Proponent may carry out a maximum of: (a) three blasts per day, unless an additional blast is required following a blast misfire;and (b) five blasts per week, averaged over a calendar year, for all operations on the site. This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or blasts required to ensure the safety of the site or its workers.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	Not Triggered			
S3.8	Operating Conditions	During operation of the project, the Proponent shall: (a) implement best management practice to: (i) protect the safety of people and livestock in the surrounding area; (ii) protect public or private infrastructure/property in the surrounding area from any damage;and (iii) minimise the dust and fume emissions from any blasting; and (b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the Secretary.		1. Audit interview (J Thompson): no damage to private property or livestock has occurred as a result of the blasting undertaken.		No damage to private property or livestock has occurred as a result of the blasting undertaken.	COMPLIANCE			
S3.9	Blast Management Plan	The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Blast* , Revision 4, dated 30 August 2012. 2. *Blast Management Plan* Version 4.0 / Revision 5, dated May 2015.			A blast management plan has been prepared and is loaded onto the Hera Website.	COMPLIANCE			
		This plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval within six months of this approval;	1. *YTC Resources Ltd, Environmental Management Plan Blast* , Revision 4, dated 30 August 2012. 2. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0191) Management Plan Approvals* ", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans.			DPE approved the plan on 28 September 2012. Correspondence confirming that the EPA was consulted during preparation of the Plan was not sighted during the audit. DPE approval for the 2015 plan was not sighted during the audit.	COMPLIANCE			
		(b) describe the blast mitigation measures that would be implemented to ensure compliance with conditions 4-8 of this schedule; and	1. *YTC Resources Ltd, Environmental Management Plan Blast* , Revision 4, dated 30 August 2012.			Section 5 of the BMP describes the measures to be implemented to ensure compliance.	COMPLIANCE			
		(c) include a blast monitoring program to evaluate the performance of the project.	1. *YTC Resources Ltd, Environmental Management Plan Blast* , Revision 4, dated 30 August 2012.			Section 5 of the BMP describes the blast monitoring program to be assess compliance.	COMPLIANCE			
S3.10	Odour	The Proponent shall ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register)		1. No offensive odours at or near the site boundaries were detected by the Auditor during the site inspection.	No odour complaints have been received by Hera during the Audit Period.	COMPLIANCE			
S3.11	Greenhouse Gas Emissions	The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas* , Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015.			Greenhouse management strategy has been prepared for the Hera operation (Section 5.8 of the AQGMP).	COMPLIANCE			
S3.12	Dust	The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 4, 5 or to 6 at any privately-owned land. See Tables 2 - 4, including the notes on page 7 of the permit	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas* , Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017 ;* dated 14 August 2017 *4. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018 ;* dated 16 August 2018 5. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019 ;* dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	Non-Compliance	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.	Hera will look into additional Dust Deposition Gauges outside the site boundaries with an Air Quality Consultant.	31 December 2020.
S3.13		The Proponent shall ensure that all point-source discharge locations on the site are designed and operated to comply with the maximum discharge concentrations applicable under the Protection of the Environment (Clean Air) Regulation 2010 and the requirements of any Environment Protection Licence issued for the project under the POEO Act.	1. *Report Number R006532, Emission Testing Report Aurelia Metals, Nymagee* , dated 24 October 2018. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all limits except Cadmium(limit 0.2 mg/m3 - result 0.62 mg/m3). 2. Report Number R004870, Emission Testing Report Aurelia Metals, Nymagee, dated 5 October 2017. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all emissionlimits. 3. Report Number R003726, Emission Testing Report Aurelia Metals, Nymagee, dated 7 March October 2017. The report details the sampling and analysis results for the two licenced point sources. The testing confirmed compliance with all emission limits.			Two licenced air emission point sources are located that the site (the gold room stacks, EPL Sampling Points 24 and 39). The emission testing results for September 2018 found that cadmium levels exceeded the Environment (Clean Air) Regulation (2010) emission limits.	Non-Compliance	1. Ensure that any emission limit exceedances are fully investigated and reported to the EPA and DPIE.	This exceedance was reported to the relevant agencies on 4 April 2020. In the future, Hera will ensure all exceedances are investigated and reported.	Completed.
S3.14	Operating Conditions	The Proponent shall: (a) implement best practice air quality management on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project;	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas* , Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017 ;* dated 14 August 2017 *4. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018 ;* dated 16 August 2018 5. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019 ;* dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an aroundthe process plant (refer to Photo #1) - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	COMPLIANCE			
		(b) minimise any visible air pollution generated by the project;			1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	COMPLIANCE			
		(c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Noted in Tables 4-6);			1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	COMPLIANCE			
		(d) take all practical measures to minimise dust emissions from the tailings storage facility; to the satisfaction of the Secretary			1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	COMPLIANCE			
		The Proponent shall prepare and implement an Air Quality and Greenhouse Gas Management Plan for the project to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas* , Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015.			DPE approved the plan on 28 September 2012. Correspondence confirming that the EPA was consulted during preparation of the Plan was not sighted during the audit. DPE approval for the 2015 plan was not sighted during the audit.	COMPLIANCE			
		This plan must: (a) be prepared in consultation with the EPA, and be submitted to the Secretary for approval within six months of this approval;	1. Letter from DPE (H Reed) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0191) Management Plan Approvals* ", dated 28 August 2012. The letter provided DPE approval for the Blast Management Plan, the Noise Management Plan and the Air Quality and Greenhouse gas Management Plans. 2. Letter from EPA (B Tanswell) to RW Corkery (R Corkery) dated 19 Septermber 2012. The letter refers to the AQGMP provided for review.			DPE approved the plan on 28 September 2012. DPE approval for the 2015 plan was not sighted during the audit, however as the 2012 vesion is loaded onto the web site, it is the Auditor's understanding that the 2012 version is the version that is being implemented. Correspondence was available to verify that the EPA was consulted during preparation of the first version of the plan.	COMPLIANCE			

S3.15	Air Quality and Greenhouse Gas Management Plan	(b) describe the measures that would be implemented to ensure compliance conditions 10-14 of this schedule;	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The management measures to be implemented to control air emissions are provided in Section 5 of the plan. Note that the currently approved version of the AQGMP does not cover all of the current dust mitigation strategies (for example the use of molasses as a road sealant.	COMPLIANCE			
		(c) describe the proposed air quality management system;	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.			The AQGMP adequately describes the air quality management system that is being implemented at the Mine.	COMPLIANCE			
		(d) include an air quality monitoring program that: (i) uses a combination of high volumes samplers and dust deposition gauges to evaluate the performance of the project; and (ii) includes a protocol for determining exceedances of the relevant conditions of this approval; and	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.	No where is this approval does it state that the Gold Room Stack must be monitored only that it should be designed to ensure compliance to air quality regulations. The requirement to monitor the gold room stack is a condition of the EPL and does not relate to this approval.	1. HVAC Sampler (refer to Photo #2) and Dust Deposition Guages	Section 6 of the plan addresses air quality monitoring. Dust deposition monitoring and HVAC sampling (including PM10 monitoring) is covered in the plan, however the monitoring of the Gold room stacks is not covered in the plan, this is a requirement of the EPL.	Non-Compliance	Review and update the 2015 version of the NMP then, consult with DPIE and EPA and then seek DPE approval for the revised plan. Ensure that the revised plan details all monitoring and compliance assessment actions required by this Approval and the EPL.	The 2019 AQSG MP details all monitoring and compliance assessment actions required by the PA and the EPL. The AQSG MP was prepared in consultation with the EPA and was submitted to the Secretary for approval on 14 March 2020.	Completed.
		(e) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site.	1. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012.			Greenhouse management strategy has been prepared for the Hera operation (Section 5.8 of the AQGMP).	COMPLIANCE			
S3.16	Meteorological Monitoring	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.	1. Excel Spreadsheet titled *"Daily_Summary (22).csv "*. The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.		1. Met Station (refer Photo #3).	Weather station monitoring results for the Audit Period were sighted by the Auditor. The weather station satisfies the requirements of the Approved Methods for Sampling Air Pollutants in New South Wales Guidelines.	COMPLIANCE			
S3.17	Water Supply	The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Secretary.	1. Site Water Balance			Hera has prepared an appropropriate water balance with the operation has has identified sources of water to ensure that there is adequate supply for the site operations.	COMPLIANCE			
S3.18	Water Discharges	The Proponent shall ensure that all surface water discharges from the site comply with: (a) section 120 of the POEO Act; or (b) the discharge limits (both volume and quality) set for the project in any applicable EPL.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019			The 2016/7 Annual review reported that two discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharges occurred on 20 July 2016 and 16 December 2016 and were reported to the DPE, EPA and DRE.	Non-Compliance	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	All discharges from site that exceed licence conditions are reported and investigated. Appropriate mitigating strategies are implemented to prevent recurrence.	Completed.
S3.19		The concentration of Weak Acid Dissociable (WAD) cyanide in tailings discharged from the discharge point to the tailings storage facility shall not exceed 10 mg/L.				The 2017/8 Annual review reported that there were several WAD cyanide incidents during this reporting period	Non-Compliance	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	All discharges from site that exceed licence conditions are reported and investigated. Appropriate mitigating strategies are implemented to prevent recurrence.	Completed.
S3.20		The concentration of Weak Acid Dissociable (WAD) cyanide at the discharge point to the process water dam shall not exceed 20 mg/L (90th percentile) or 30 mg/L (maximum).				The 2018/9 Annual Review reported that During the reporting period there were no discharges from the sediment basin and no flows recorded in the clean water by pass drain through site. There were also no flows in any creeks or drainage courses across site as a result of the extended drought. Therefore no surface water monitoring of creeks or drainage lines was able to be undertaken.	Non-Compliance	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	All discharges from site that exceed licence conditions are reported and investigated. Appropriate mitigating strategies are implemented to prevent recurrence.	Completed.
S3.21	Compensatory Water Supply	The Proponent shall provide a compensatory water supply to any owner on privately-owned land whose water supply is adversely impacted (other than an impact that is negligible) as a result of the project, in consultation with DPI Water, and to the satisfaction of the Secretary. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent in volume and quality to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified, unless otherwise agreed with the landowner. If the Proponent and the affected landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.	1. Email from Hera (J Thompson) to DPI Water (T Baker) and DPE (K O'Reilly) titled "Standing water level WB18", dated 23 November 2018. The email states that Hera had commenced negotiations with a landholder in regards to a reduction in groundwater levels (at the landowners property).			Negotiations have commenced with one impacted (groundwater) landowner.	COMPLIANCE			
S3.22	Design and Permeability of Storages	The Proponent shall ensure that the floor and walls of: (a) the leachate management pond, seepage collection pond (associated with the tailings storage facility), process water dam and water dam are lined to achieve a permeability of no less than 1 x 10-9 m/s to a depth of at least 900 millimetres of clay (or equivalent); and	1. Email (and attachments) from Total Lining Systems (S Short) to YTC Resources (S Pearce) titled *" Sediment Pond Lining "*, dated 7 August 2017. The email provides copies of the leachate pond design and construction QA/QC report.		1. Process Water Management System (refer Photo #4).	The leachate management system ponds are lined with 2 mm HDPE. The QA reports associated with the construction of the ponds does not certify the permeability of the liners. Finding: Not Verified.	Non-Compliance	Obtain a copy of the relevant engineering report certifying the permeability of the pond liners.	Rengage consultant to conduct HDPE Weld Quality Control and confirm the effectiveness of the Process Water Dam and Waste Rock Leachate Pond.	Completed.
		(b) the tailings storage facility (except for the seepage collection pond) is lined to achieve a permeability of no less than 1 x 10-8 m/s to a depth of at least 600 millimetres of clay (or equivalent). Note: An alternative permeability standard may be acceptable following completion of an appropriate risk assessment undertaken in accordance with the Environmental Guidelines – Management of Tailings Storage Facilities (VIC DPI, 2004), to the satisfaction of the EPA and the Secretary.	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW* , September 2016. The report stated: *" Section 4.3 (p5) of the TSF Stage 1 Construction Report (Coffey, 17 June 2014) confirms that the permeability of the TSF basin floor exceeded the required value of 10-8 m/s over a 600mm depth ".*		1. Tailings Storage Facility (Refer to Photo #5).	The permeability of the TSF satisfies the 10-8 m/s standard.	COMPLIANCE			
S3.23		The clean water diversion around the tailings storage facility shall be designed, constructed and maintained to prevent the probable maximum flood from the catchment upstream of the facility from entering the facility.	1. Letter from Hera (J Thompson) to DPE (K O'Reilly) titled *"Independent Environmental Audit Aug 2013 – Sep 2016 – Action Plan Condition 23, Schedule 3 Design and Permeability of Storages "*, dated 21 December 2017. The includes a plan showing the TSF diversion drain construction compliance with the requirements of this Condition. The letter also contained a survey plan that confirms the that the as built structure meets these requirements.		1. TSF Clean Water Diversion (Refer Photo #6)	The clean water diversion meets the design requirements detailed in this Condition.	COMPLIANCE			
S3.24		The process water and raw water dams shall be maintained with a minimum freeboard sufficient to accommodate a 1 in 100-year ARI, 72-hour rainfall event without overtopping at all times.	1. *Draft Water Management Plan 2018, Version 6* , dated November 2019. Section 4.1.4 discusses contaminated water management, including process water and refers specifically to the 200mm freeboard in the process water pond.		1. The 200 mm free board is indicated by a marker installed in the pond.	A freeboard of at least 200mm is to be achieved as a minimum operational condition allowing capacity to capture the 100 year 72 hour design rainfall event (GHD; July 2016 Water Management Plan). Currently the process water dam height set point is controlled at 80%.	COMPLIANCE			
S3.25	Water Management Plan	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must be prepared in consultation with EPA and DPI Water	1. *Aurelia - Hera Gold WMP Water Management Plan 2016* , prepared by GHD. 2. *Draft Water Management Plan 2018, Version 6* , dated November 2019.			A Water Management appears to have been prepared in 2013 by RW Corkery. A copy of this plan was not available at the time of the audit and no correspondence relating to that version of the plan was sighted. GHD prepared an updated plan in 2016. Correspondence from DPE approving the plan author(s) or approving the plan was not sighted during the audit. The plan has been further revised in 2018, but has yet to be approved by DPE. Correspondence from DPE approving the plan author(s) or approving the plan was not sighted during the audit.	COMPLIANCE			
		The plan must be prepared by suitably qualified and experienced persons whose appointment has been approved by the Secretary.	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW* , September 2016. The report stated: *" A letter was received from the NSW DPI on 31st August 2012 approving the three experts (Mark Passfield, James Morrow and Wayne Russell) that contributed to the development of the site Water Management Plan (WMP), which was coordinated by external consultant RW Corkery and CS Pty Ltd ".*			DPI Water endorsed the appointment of three experts to prepare the original plan on 31st August 2012. Correspondence from DPE approving the appointment of the authors of the 2016 or 2018 plan revisions was not sighted during the Audit. Finding: NOT VERIFIED	Non-Compliance	Request approval from DPIE for the appointment of the experts responsible for the (yet to be approved) 2019 Water Management Plan.	DPIE approved the appointment of expert for the Water Management Plan on 3 March 2020.	Completed.
		and submitted to the Secretary for approval within six months of this approval, or prior to commencement of mining operations under this approval, whichever is sooner;				Correspondence verifying that the original plan was submitted to DPE / DPI was not sighted during the Audit. Finding: NOT VERIFIED	Non-Compliance	Ensure that the current version of the Water Management Plan is approved by DPIE.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		In addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include: (a) a Site Water Balance that includes details of: • sources of water supply; • water use on site, including any potable water use; • water management on site; • off-site water discharges, including volume, timing and release point infrastructure requirements; and • reporting procedures including comparisons of the site water balance for each calendar year; and	1. *Draft Water Management Plan 2018* , Version 6, dated November 2019. The site water balance is provided in Section 4.5 and Appendix F of the plan.			The water balance model provided in the Draft Plan (the auditor understands that this unapproved version of the plan is currently being implemented) meets the requirements of this Condition.	COMPLIANCE			
		(b) a Surface Water Management Plan, which includes: • baseline data on surface water flows and quality in waterbodies that could be affected by the project; • a detailed description of the surface water management system on site, including the: - clean water diversion systems; - erosion and sediment controls; and - water storages, including the tailings storage facility, raw water or process water dams; • design objectives and performance criteria, including trigger levels for investigating any potentially adverse impacts, for the following: - the water management system; - water storages including the tailings storage facility, raw water or process water dams; and - surface water quality in waterbodies that could be affected by the project; • performance criteria for surface water quality attributes relevant to water quality impacts on biological diversity and aquatic ecological integrity, including cyanide, salinity, heavy metals, sediment load, pH, hardness and biological oxygen demand; • a program to monitor: - the effectiveness of the water management system; - surface water flows, quality, and impacts on water users; - potential acid rock drainage; - potential leakage or spillage from tailings, mineral concentrate or effluent pipelines; - post-closure water quality; - impacts on wildlife from exposure to cyanide or other toxic chemicals; and • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project, including but not limited to management measures to reduce wildlife exposure to cyanide or other toxic chemicals; • reporting procedures for the results of the monitoring program; and	1. *Draft Water Management Plan 2018* , Version 6, dated November 2019. Section 4.1 describes the surface water system, Appendix G provides the Trigger Value Action Plan and Section 6.2 describes the surface water monitoring program.			The required elements of the Surface Water Management Plan are contained in the Draft Water Management Plan.	COMPLIANCE			
		(c) a Groundwater Management Plan, which includes: • baseline data of all groundwater levels, yield and quality in the region, and any privately-owned groundwater bores that could be affected by the project; • detailed documentation of the operation of the seepage collection and storage system associated with the tailings storage facility and associated maintenance requirements; • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts, including but not limited to leakage from the tailings storage facility; • a program to monitor: - impacts on the groundwater supply of potentially affected landowners; - impacts on the volume of groundwater inflow into the underground workings; - regional groundwater levels and quality in all potentially affected aquifers; - potential acid rock drainage; - the effectiveness of the seepage collection and storage system and associated infrastructure in collecting and containing all seepage from the tailings storage facility and all other water storages that receive chemical or salt-laden water; - the quality of groundwater to be re-used on the site; - any post-rehabilitation seepage from the tailings storage facility; and • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse groundwater impacts of the project, including but not limited to: - procedures to minimise the potential for soil salinity, sodicity and other contaminant issues associated with the reuse of groundwater on site; and - measures to manage and mitigate any leakage from the tailings storage facility, including but not limited to that detected beyond the seepage collection and storage system.	1. *Draft Water Management Plan 2018* , Version 6, dated November 2019. Section 4.3 describes the groundwater system, Appendix G provides the Trigger Value Action Plan and Section 6.3 describes the groundwater monitoring program.			The required elements of the Groundwater Management Plan are contained in the Draft Water Management Plan.	COMPLIANCE			

S3.26	Biodiversity Offset Strategy	By 31 July 2016, the Proponent shall prepare a Biodiversity Offset Strategy for the project to the satisfaction of the Secretary.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.	1. J.Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in delays in finalisation of the plan.	**Non-Compliance**	Seek DPE Approvals for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this tEA.	4 July 2020.
		The Strategy must: (a) be prepared in consultation with OEH;	1. Letter from OEH (S Cox) to RW Corkery (M Bland) titled "*Hera mine Biodiversity Management Plan* ". The letter from OEH provides input into the Biod diversity off-set management plan (that includes the Off-set Strategy);			OEH were consulted during the preparation of the biodiversity management plan.	**COMPLIANCE**			
		(b) identify the portion of the Chelsea site (WLL 3881) that would be conserved in perpetuity to offset the impacts of the project using the Biobanking Assessment Methodology; and	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			The Biodiversity off-set area is identified in Section 4.2.	**COMPLIANCE**			
		(c) describe the specific management measures that would be implemented on the Chelsea site to conserve and improve the biodiversity values of the site over time.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			Section 4.6 of the Biodiversity Management Plan (Section 4 is the Biodiversity Offset Strategy) sets out eight specific management measures e.g. weed and pest management.	**COMPLIANCE**			
S3.27		Following approval, the Proponent shall implement the Biodiversity Offset Strategy to the satisfaction of the Secretary.		1. J.Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		Hera has been working on the Chelsea off-set area since 2016. A substantial volume of correspondence was provided to the auditor evidencing the consultation activities undertaken.	**Not Triggered**			
S3.28	Long Term Security	Within 12 months of the approval of the Biodiversity Offset Strategy, the Proponent shall make suitable arrangements to conserve the offset area identified in the Biodiversity Offset Strategy in perpetuity to the satisfaction of the Secretary.		1. J.Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.			**Not Triggered**			
S3.29	Biodiversity Management Plan	Within 6 months of approval and prior to the commencement of vegetation clearing on the site under this approval, the Proponent shall submit a Biodiversity Management Plan for the project site to the Secretary for approval. This plan must:	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.	1. J.Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		A biodiversity management plan was prepared. The draft Biodiversity Management Plan incorporating a Biodiversity Offset Strategy was submitted to DPE by email (sighted) on 15 July 2016. Subsequent delays in relation to the off-set strategy and bio banking agreements resulted in continuing delays in the finalisation of the plan.	**Non-Compliance**	Seek DPE Approval for the completion and finalisation of the Biodiversity Off-set Strategy and the Biodiversity Off-set Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this tEA.	4 July 2020.
		This plan must: (a) be prepared by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW, September 2016* . The report stated: " *A letter (dated 31/08/12) from the NSW Department of Planning & Infrastructure endorsing Hera's proposed list of experts as being suitably qualified and experienced person(s) was sighted and is appended to the draft BMP.* "			DPE approved the experts that prepared the Biodiversity Management Plan on 31 August 2012.	**COMPLIANCE**			
		(b) be prepared in consultation with OEH	1. Letter from OEH (S Cox) to RW Corkery (M Bland) titled "*Hera mine Biodiversity Management Plan* ". The letter from OEH provides input into the Biod diversity off-set management plan (that includes the Off-set Strategy);			OEH were consulted during the preparation of the biodiversity management plan.	**COMPLIANCE**			
		(c) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			The biodiversity off-set area is remote from the mine, therefore rehabilitation of the mine site cannot be integrated with the implementation of the Off-set strategy.	**Not Triggered**			
		(d) describe the short, medium, and long term measures that would be implemented to: (i) manage the remnant vegetation and habitat on the site and in the offset area/s (if and when applicable); (ii) minimise the impacts on Cobar Greenhood Orchid (Cryptostylis cobarensis), Lobed Blue-grass (Bothriochloa biloba) and hollow-bearing trees; and (iii) implement the biodiversity offset strategy (if and when applicable), including detailed performance and completion criteria;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			The Draft BMP addresses the sub-paragraphs of this condition as follows: (i) The short, medium, and long term measures that would be implemented to manage the remnant vegetation and habitat on the site and in the offset area/s (if and when applicable) are described in section 3.5 on Peak and section 4.6 Chelsea. (ii) The short, medium, and long term measures that would be implemented to minimise the impacts on Cobar Greenhood Orchid (Cryptostylis cobarensis), Lobed Blue-grass (Bothriochloa biloba) and hollow-bearing trees are described in section 3.5 on Peak and section4.6 Chelsea. (iii) The short, medium, and long term measures to implement the biodiversity offset strategy (if and when applicable), including detailed performance and completion criteria are referenced in section 4.5	**COMPLIANCE**			
		(e) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			The draft BMP discusses trigger levels and monitoring of the mine site in section 4.5, with detailed trigger levels in Table 8.	**COMPLIANCE**			
		(f) include a detailed description of the procedures to be implemented for: (i) enhancing the quality of existing vegetation and fauna habitat; (ii) restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary); (iii) maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; (iv) collecting and propagating seed; (v) minimising the impacts on fauna on site, including pre-clearance surveys and minimising the potential exposure to tailings; (vi) controlling weeds and feral pests; (vii) controlling erosion; (viii) managing grazing and agriculture on site; (ix) controlling access; and (x) bushfire management;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			(i) A detailed description of the procedures to be implemented for enhancing the quality of existing vegetation and fauna habitat are described in sections 3.5.4.1 and 4.6 of the draft BMP. (ii) A detailed description of the procedures to be implemented for restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features are described in sections 3.5.4.2 (hollow trees), 3.5.3.2 (soil) and 3.5.3.6 (No cultural resources identified) of the draft BMP. (iii) A detailed description of the procedures to be implemented for maximising the salvage of resources within the approved disturbance area including vegetative, soil and cultural heritage resources, for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area are described in sections 3.5.4.2 (hollow trees), 3.5.3.2 (soil) and 3.5.3.6 (No cultural resources identified) of the draft BMP. v) A detailed description of the procedures to be implemented for collecting and propagating seed is listed in section 3.5.3.3 of the draft BMP. (v) A detailed description of the procedures to be implemented for minimising the impacts on fauna on site (section 5.5.3), including pre-clearance surveys and minimising the potential exposure to tailings is described in sections 3.5.4.3, (TSF – 2 management procedures). (vi) a detailed description of the procedures to be implemented for sections 3.5.7 (weeds) and section 3.5.4.5 (vertebrate pest management – Appendix A). (vii) The procedures to be implemented for controlling erosion are referred to in section 3.5.3.5 of the draft BMP which in turn refers to the Water Management Plan and the MOP. Section 4.2.2.4 of the MOP describes erosion control methods. (viii) A detailed description of the procedures to be implemented for managing grazing and agriculture on site is listed in section 3.5.5 of the draft BMP. (ix) A detailed description of the procedures to be implemented for controlling access is listed in sections 3.5.5 and 3.5.8 of the draft BMP. (x) A detailed description of the procedures to be implemented for bushfire management is listed in section 4.6.8 of the draft BMP.	**COMPLIANCE**			
		(g) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			A seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria is listed in sections 5 (monitoring) and 7 (reporting) of the draft BMP.	**COMPLIANCE**			
		(h) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			A Trigger Action Response Plan (TARP) has been included in the management plan (Section 6). The TARP identifies the risks and includes relevant measures to be implemented to mitigate against these risks.	**COMPLIANCE**			
		(i) include details of who would be responsible for monitoring, reviewing and implementing the plan.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.			The details of the personnel who would be responsible for monitoring, reviewing and implementing the plan are listed in Table 2 of section 2.1 of the draft BMP.	**COMPLIANCE**			
S3.30		Within 6 months of the approval of the Biodiversity Offset Strategy, the Proponent shall submit an updated Biodiversity Management Plan to the Secretary for approval.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.	1. J.Thompson 19 November 2019. The Biodiversity Management Plan has not been approved.		The biodiversity management plan has not yet been approved.	**Not Triggered**			
S3.31	Conservation Bond	Within three months of the approval of the Biodiversity Management Plan, the Proponent shall lodge a conservation bond with the Department to ensure that the biodiversity offset is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall cover the full cost of implementing the Biodiversity Offset Strategy and be verified by a suitably qualified rehabilitation specialist or quantity surveyor. If the biodiversity offset is implemented to the satisfaction of the Secretary, the Secretary will release the conservation bond. If the offset strategy is not implemented to the satisfaction of the Secretary, the Secretary will call in all or part of the conservation bond, and arrange for the satisfactory implementation of the biodiversity offset.	1. *Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine* , prepared by RW Corkery, dated June 2016.	1. J.Thompson 19 November 2019. The conservation bond has not yet been paid as the Biodiversity Management Plan has not been approved.		The biodiversity management plan has not been approved, therefore the payment of the conservation bond is not yet due.	**Not Triggered**			
S3.32	Heritage	The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan to the satisfaction of the Director-General. This plan must:	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage* , Revision 1.1, dated 19 August 2012 2. *Environmental Management Plan Aboriginal Cultural Heritage* Version 5.0 / Revision 5, dated 2 May 2015.			The Aboriginal Heritage Management Plan was prepared in 2013. This plan has been approved by DPE. A subsequent version was prepared in 2015. No correspondence verifying that the 2015 version of the plan has been approved by DPE was sighted.	**COMPLIANCE**			
		(a) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage* , Revision 1.1, dated 19 August 2012. Section 6 of the plan details the consultation processes undertaken during the preparation of the plan.			The 2013 Aboriginal Heritage Management Plan contains details of the consultation undertaken during the preparation of the plan.	**COMPLIANCE**			
		(b) be submitted to the Secretary for approval within six months of this approval; and	1. Letter from DPE (K Winwood) to YTC Resources (S Haures) titled "*Hera Project (MP 10_0192) Heritage Management Plan* ", dated 5 October 2012. The letter provided DPE approval for the Aboriginal Heritage Management Plan.			The Heritage Management Plan was approved by DPE on 5 October 2012.	**COMPLIANCE**			
		(c) describe the measures that would be implemented for: • monitoring all new surface disturbance on site for unidentified Aboriginal objects; • managing the discovery of any human remains or previously unidentified Aboriginal objects on site; and • ensuring ongoing consultation with Aboriginal stakeholders in the conservation and management of any Aboriginal cultural heritage values on site.	1. *YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage* , Revision 1.1, dated 19 August 2012. Section 6 of the plan details the consultation processes undertaken during the preparation of the plan.			Section 4.5 (Roles and Responsibilities) allocates responsibility to the Environmental Officer to undertake inspections of any area that has not been surveyed, prior to any new surface disturbances. Section 6.2 discusses the process for dealing with unexpected finds and the consultation (with aboriginal groups) to be implemented.	**COMPLIANCE**			
S3.33	Dangerous Goods	Transportation of all dangerous goods to or from the site shall be undertaken in strict accordance with Australian Code for the Transport of Dangerous Goods by Road and Rail.	1. *Traffic Management Plan* , Revision 3, dated 14 may 2016.			Section 5.4.4 of the Traffic Environmental Management Plan (revision 3 dated 15 August 2012) states that the Environmental Officer will be responsible to ensure that this condition is satisfied, and refers to the Hazardous Material Management Plan (HMMP). Section 5.10 of the HMMP states that "transportation of hazardous materials to Hera will only be undertaken by contractors who are certified to carry dangerous goods and have been trained in the "Australian Code for the Transport of Dangerous Goods by Road and Rail"" (the Code).	**COMPLIANCE**			
S3.34		Within 6 months of the date of this approval, the Proponent shall: (a) commission a suitably qualified independent expert, whose appointment has been approved by the Secretary, to undertake a design and pavement condition review for the intersection of Burthong Road and Priory Tank Road, which: (i) identifies any deficiencies in the design or pavement condition of the intersection; (ii) recommends appropriate design upgrades and pavement repairs taking into consideration the type, volume and direction of traffic generated by the mine; and (iii) ensures the recommended design is in accordance with the applicable AUSTROADS standards. (b) undertake intersection design and pavement upgrades in accordance with the recommendations of the review in (a), in consultation with CSC, and to the satisfaction of CSC.	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW* , September 2016. The report stated: "A suitably qualified independent expert whose appointment was approved by the Secretary (then known as the Director-General), was commissioned to undertake a design and pavement condition review for the intersection of Burthong Road and Priory Tank Road. This was done within 6 months of the date of the Project Approval. A letter (dated 22/1/13) of endorsement from the Director-General referring to Conditions 34 and 35 of the Project Approval was sighted.." 2.*Intersection Assessments Nymagee and Hermindale Road* (plans) prepared by Geolyse. 3. Hera Resources Purchase Order POS-7681-1, dated 13 November 2015.			Hera has commissioned the design of the intersection in accordance with this Condition. The works in paragraph (b) were completed by CSC in January/February 2016 (audit interview). Aurelia purchase order of 13 November 2015 was sighted. These works were undertaken prior to this Audit Period.	**Not Triggered**			
S3.35	Road Upgrades	Within 6 months of the date of this approval, the Proponent shall: (a) commission a suitably qualified independent expert, whose appointment has been approved by the Secretary, to undertake a review of the existing traffic control devices on Burthong Road and Priory Tank Road, which: (i) reviews all existing traffic devices, including traffic signs, traffic signals, pavement markings, guide posts, delineators and safety barriers, and identifies any deficiencies; and (ii) recommends appropriate upgrades in accordance with the applicable AUSTROADS standards; (b) install traffic control devices in accordance with the recommendations of the review in (a), to the satisfaction of CSC.	1. *Review of Traffic Control Devices Hera Mine to Hermindale Sidling* , prepared by Geolyse, dated May 2014. 2. *Independent Environmental Audit, Hera Resources Pty ltd* , Hera Project, NUMAGEE NSW, September 2016. The audit report stated, with respect to Condition S3.35 "A letter (dated 22/1/13) of endorsement from the Director-General referring to Conditions 34 and 35 of the Project Approval was sighted". 3. Letter from Hera (D Fredrickson) to CSC (K Page) titled "*RE: Hera Resources Amendments to Concentrate Haulage Route* ", dated 20 June 2014. The letter outlines Hera's commitment to CSC to fund the upgrade works recommended in the Geolyse report.			Hera commissioned the required report and funded the installation of the required traffic controls. Installation of traffic control devices in accordance with the recommendations of the review in paragraph (a) had not been completed within 6 months of the date of the Project Approval.	**Non-Compliance**	This is an historical non-compliance. The works have been completed. No further action required.	PA Observation 3 - Noted.	Completed.

S3.35A		Prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, or an alternative date nominated by BSC and CSC (with respect to the works within the relevant local government area), the Proponent shall implement, or contribute to the cost of implementing the recommendations in the report titled Visual Review of Traffic Control Devices – Hera Mine to Hermidale Siding prepared by Geolyse Pty Ltd and dated 7 May 2014, to the satisfaction of BSC and CSC.	1. Email from BSC (G Bourke) to Hera (S Haures) titled " *Nymagee to Hermidale Road* ", dated 5 November 2014. The email refers to the receipt by Council of the Visual Road Pavement Assessment Report and committed to undertaking repairs to the road on an as needs basis. 2. Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW, September 2016.			The recommendations in the Geolyse report dated 7 May 2014 had not been implemented prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road in October 2014.	Non-Compliance	This is an historical non-compliance. The works have been completed. No further action required.	PA Observation 4 - Noted.	Completed.
S3.35B		Prior to commencing the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, or an alternative date nominated by CSC, the Proponent shall upgrade the intersection of Hartwood Street and Milford Street in accordance with the recommendations of the report titled Geotechnical Investigation of Hartwood Street and Milford Street on Priory Tank Road, Nymagee NSW, prepared by Envirowest Consulting Pty Ltd dated 23 May 2014 and the relevant AUSTROADS standards, to the satisfaction of CSC.	1. Report titled Geotechnical Investigation of Hartwood Street and Milford Street on Priory Tank Road, Nymagee NSW, prepared by Envirowest Consulting Pty Ltd dated23 May 2014 2. Email from CSC (A Shepard) to Hera (J Thompson) titled "FW: Nymagee Intersection Works", dated 23 August 2016. The email confirms that the intersection works had been completed.			The works required by this Condition were completed (by Council).	COMPLIANCE			
S3.35C		Every two months during the transport of concentrate to the Hermidale rail siding via Nymagee-Hermidale Road, the Proponent shall (a) inspect the condition of the unsealed section of the transport route in consultation with BSC; and (b) grade the unsealed section of Nymagee-Hermidale Road where required and as identified in the inspection carried out in accordance with condition 35C(a), to the satisfaction of BSC.	1. Records of inspection of the unsealed section of Nymagee - Hermidale Road for the past three years		1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Records of inspection were sighted by the Auditor. The Nymagee - Hermidale Road is now sealed for its entire length.	COMPLIANCE			
S3.36	Access Road and Intersection Construction	The Proponent shall construct the site access road for heavy vehicles, and associated intersection of this access road and Burthong Road, prior to the commencement of construction of the process plant. The intersection shall be designed and constructed to the satisfaction of CSC and in accordance with the applicable AUSTROADS standards.	1. Letter from CSC approving the design and construction of the Access Road and Intersection		1. The site access roads and intersections have been constructed. Refer to Photo #7.	Hera had constructed the site access road for heavy vehicles, and associated intersection of this access road and Burthong Road prior to the commencement of construction of the process plant (audit interview). It was also visually verified in the July 2013 Audit that road construction had begun prior to the commencement of construction of the process plant.	COMPLIANCE			
S3.37	Monitoring of Concentrate Transport	The Proponent shall: (a) keep accurate records of the: (i) amount of lead and zinc concentrate transported fromthe site (on a monthly basis); and (ii) the date and time of loaded truck movements from the site; and (b) provide the Secretary with a summary of these truck movements in the Annual Review.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201* 7; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2018 to 15 May 2019* ; dated 14 August 2019.			Hera keeps accurate records of the amount of lead and zinc concentrate transported from the site by calculating the net weight of each truck load. A dedicated weighbridge is located on site for this purpose. Concentrate tonnage records are kept in the metallurgy database (MPX-DS) on a per truck basis (sighted). Monthly tonnage amounts can be calculated and are also available on Aurelia's website (sighted). Hera publish the required information in the Annual Reviews.	COMPLIANCE			
S3.37A	Transport of Concentrate to Hermidale Rail Siding	The Proponent shall restrict the transport of concentrate to the Hermidale rail siding via the Nymagee-Hermidale Road during daylight hours and limit vehicle movements (entering and leaving the site) to 4 per day, averaged over a calendar month, unless otherwise agreed by the Secretary.	1. *Traffic Management Plan* , Version 3.0, dated 14 May2016. 2. *Drivers Code of Conduct* Revision 2.0, dated November 2018. 3. Records of concentrate transport for the past three years (monthly web reports)			Section 5.3 of the Traffic Management Plan refers to the concentrate transport limits. The Drivers Code of Conduct specifies the permitted concentrate transport times. A review of the monthly web reports confirmed compliance with the concetrate load limit of 4 trucks per day average over a year.	COMPLIANCE			
S3.38	Traffic Management Plan	The Proponent shall prepare and implement a Traffic Management Plan to the satisfaction of the Secretary.	1. *Traffic Management Plan* , Version 3.0, dated 14 May2016. 2. *Traffic Management Plan* Version 3.0, dated February 2017. 2. Letter from DPE (C Preshaw) to Hera (J Thompson) titled "*Hera Gold Mine (10_0191) Approval of Traffic Management Plan* ", dated 14 November 2017.			DPE approved the Traffic Management Plan in November 2017.	COMPLIANCE			
		The plan shall: (a) focus on traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale;	1. *Traffic Management Plan* , Version 3.0, dated February 2017.			The Traffic Management Plan does not clearly address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	Non-Compliance	Revise the Traffic Management Plan to address traffic management along Nymagee-Hermidale Road, Burthong Road and Priory Tank Road, particularly in the vicinity of the villages of Nymagee and Hermidale.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(b) describe the measures to minimise conflicts between road users and ensure that trucks from the mine do not travel through surrounding local roads;	1. *Traffic Management Plan* , Version 3.0, dated February 2017.			The responsibilities of truck drivers in relation to the minimisation of conflicts with other road users in contained in the Drivers Code of Conduct.	COMPLIANCE			
		(c) be developed in consultation with both BSC and CSC and submitted for the approval of the Secretary prior to carrying out any development on the site under this approval.	1. Email from CSC (S Poulter) to Hera (J Thompson) titled " *Traffic Management Plan - submission for comment*", dated 20 February 2017. The email acknowledges the request for comment on the draft plan. 2. Email from BSC (G Bourke) to Hera (J Thompson) titled " *Traffic Management Plan - submission for comment* ", dated 20 February 2017. The email acknowledges the request for comment on the draft plan.			Hera consulted with both Councils during the preparation of the Traffic Management Plan.	COMPLIANCE			
S3.39	Visual	The Proponent shall: (a) implement all reasonable and feasible measures to minimise the visual impacts, and particularly the off-site lighting impacts, of the project;			1. External lighting associated with the Mine surface facilities is not visible from neighbouring properties.	The processing plant and related infrastructure is well set back from the public road and is naturally screened due to the topography and trees .	COMPLIANCE			
		(b) ensure that all external lighting associated with project complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting, to the satisfaction of the Secretary.	1. Letter from Light Harmony (R Nixon) to Hera (S Ramsy) titled " *Compliance with Control of the Obtrusive Effects of Outdoor Lightings - AS4282* " dated 8 February 2017.		1. External lighting associated with the Mine surface facilities is not visible from neighbouring properties.	By letter dated 8 February 2017, Light Harmony (Lighting Engineering & Design Consultants) stated "Based on the remote location and our assessment of the existing lighting system, we would deem that the Hera process plant and ancillary areas complies with the principles and guidelines of AS4282 Table 2.1 recommended maximum values of light technical parameters for the control of obtrusive light."	COMPLIANCE			
S3.40	Final Hazard Analysis	The Proponent shall prepare a Final Hazards Analysis (FHA) for the project to the satisfaction of the Secretary, in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.	1. *Environmental Management Plan Hazardous Materials* , Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Hazardous Materials Management Plan* ", dated 1 May 2013.	Hera contend this condition should be Compliant. The condition states that this must be prepared to the satisfaction of the Secretary. As the Secretary has approved the plan, this condition has been satisfied. The issues you have identified are separate to this condition and I would suggest a recommendation and not mandated by the condition.		The September 2016 IER found that a Final Hazards Analysis (FHA) had not been completed. The recommendation to complete a final hazard analysis has not been actioned. A Preliminary Hazard Analysis (PHA) was completed by RW Corkery & Co as part of the EA (Nov. 2011) (sighted). Section 5.1 of the Hazardous Materials Management Plan states that "As there are no changes to the design of the Mine, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Condition 3(40) of Project Approval whereby a Final Hazards Analysis was to be prepared". The previous audit in July 2013 noted "As the Hazardous Materials Management Plan has been approved by the Director-General, YTC Hera is compliant with this condition." However, the 2013 audit was conducted prior to the construction and operation of the processing plant; an area where the majority of the hazardous materials are stored or used. At the time of the audit in September 2016, it was observed that there are hazardous goods (e.g. LNG Class 2.1)and processes (e.g. Meta Foundries – gold room) that were not identified in the original PHA.	Non-Compliance	Conduct a Final Hazard Analysis in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines	Conduct a Final Hazard Analysis in accordance with Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines.	30 September 2020.
S3.41	Hazardous Materials Management Plan	The Proponent shall prepare and implement a Hazardous Materials Management Plan for the project to the satisfaction of the Secretary. The plan must:	1. *Environmental Management Plan Hazardous Materials* , Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled "*Hera Gold Mine (10_0191) Hazardous Materials Management Plan* ", dated 1 May 2013.			A hazardous Materials Management Plan has been prepared by Hera.	COMPLIANCE			
		(a) be prepared in consultation with the relevant government agencies including CSC, RMS, EPA, DPI Water, WorkCover NSW and DRE;				No correspondence was available to verify that the EPA, DPI Water, DRE, CSC, RMS, or Workcover were consulted during preparation of the Plan.	Non-Compliance	Review and update the Hazardous Materials Management Plan. During preparation of the plan consult with the relevant agencies.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(b) be consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold;			1. Cyanide Storage Facilities (Refer to Photo #8).	Section 5.8 of the HMMP lists the cyanide controls to be used which are consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Code).	COMPLIANCE			
		(c) be submitted to the Secretary for approval prior to commencing mining operations under this approval;				The current version of the Hazardous Materials Management Plan has been approved by DPE.	COMPLIANCE			
		(d) describe the measures that would be implemented to: (i) ensure sodium cyanide and other toxic chemicals are stored and handled on the site in accordance with AS/NZ 4452 – The Storage and Handling of Toxic Substances; and (ii) ensure the transportation of hazardous materials to or from the site is undertaken in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection and the Australian Code for the Transport of Dangerous Goods by Road and Rail – current version; and				The HMMP does not satisfy paragraph (d)(i) in that it does not specify measures in relation to the storing and handling of lead nitrate (and toxic chemical). The plan does not satisfy paragraph (d)(ii) in that it does not describe the route selection for the transportation of cyanide from its point of origin to the mine in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection.	Non-Compliance	Review and update the Hazardous Materials Management Plan to include the relevant requirements of AS 4452.	The 2019 HAZMAT MP does include the relevant requirements of AS/NZS 4452. Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(e) detail the emergency procedures for the Project consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.				The HMMP does not satisfy paragraph (e) of this condition in that it does not include all of the procedures contained in the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	Non-Compliance	Review and update the Hazardous Materials Management Plan to include the relevant requirements of Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning.	The 2019 HAZMAT MP does include the relevant requirements in the Department's Hazardous Industry Planning Advisory Paper No. 1 - Emergency Planning. Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
S3.42	Waste	The Proponent shall: (a) minimise the waste generated by the project;	1. *Environmental Management Plan Hazardous Materials* , Version 1.0, dated 9 April 2013.		1. Waste recycling including oil and scrap steel at the workshops as well as general waste segregation/recycling in strategically placed bins was sighted during the Audit. Refer to Photo #9.	Hera addresses waste minimisation and disposal in section 5.5 of the Hazardous Materials Management Plan (HMMP) .	COMPLIANCE			
		(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and	1. Waste Disposal Records.		1. Waste bins are strategically located around the site. Suitable bins are available to allow segregation of wastes. Waste storage areas are clearly signposted. Refer to Photo #10.	Appropriate waste collection and storage facilities are provided. Waste records sighted demonstrate that appropriate waste disposal options are in place.	COMPLIANCE			
		(c) manage on-site sewage treatment disposal in accordance with the requirements of CSC, to the satisfaction of the Secretary.	1. Letter from CSC to YTC Resources titled "*Approval to Install / Construct a Sewage Management System*", dated 18 December 2012. 12 Letter from CSC to YTC Resources titled "Approval to Install / Construct a Sewage Management System", dated 23 September 2013 3. Certificate of Completion, Fuji CE6000 sewage treatment system - by True Water Australia, dated 9 August 2013.		1. Sewage Treatment Plant and irrigation areas.	Sewage treatment systems have been installed and are managed in accordance with Council requirements.	COMPLIANCE			
		The Proponent shall prepare and implement a Waste Rock Management Plan to the satisfaction of the Secretary.	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014. 2. *Draft Waste Rock Management Plan* , Revision 2, dated 24 November 2018.			The 2014 version of the plan has been approved by DPE and is the current version of the plan. A updated plan has been drafted, but not yet finalised or approved.	COMPLIANCE			
		The plan must: (a) be developed in consultation with the EPA and DPI Water;	1. *Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW* , September 2016. The Audit report stated: "The current Waste Rock Management Plan (WRMP) had been developed in consultation with the EPA and NOW. A letter (dated 21st November 2012) was sighted requesting comment from both the EPA and NOW. Letters of response (from NOW dated 21/06/13 and the EPA dated 21/12/12) were sighted."			The 2014 Waste Rock Management Plan (WRMP) was developed in consultation with the EPA and NOW.	COMPLIANCE			

		(b) submitted for the approval of the Secretary within six months of this approval;	1. Letter from DPE (H Reed) to Hera (S Hsaures) titled "*Hera Gold Mine (10_0191) Waste Rock Management Plan* ", dated 22 July 2013.			DPE approved the Waste Rock Management Plan in July 2013. The WRMP had not been prepared and submitted for the approval of the Secretary within six months of this Project Approval (audit interview).	**Non-Compliance**	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(c) include a detailed description of the procedures to be implemented to monitor and manage potential acid forming material;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			A detailed description of the procedures to be implemented to monitor and manage potential acid forming material is described in section 4.3 of the WRMP	**COMPLIANCE**			
S3.43	Waste Rock Management Plan	(d) reflect the groundwater and surface water monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation (covering monitoring methods, trigger levels and proposed management actions);	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.2.1 in the WRMP describes the monitoring programs to monitor potentially acid-forming waste rock and any leachate generated, including appropriately designed detection and response systems for acid generation. Specific visual levels trigger proposed management actions such as pumping to the process water dam. Trigger levels for acid detection (e.g. ph levels) have not been included in the WRMP.	**Non-Compliance**	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(e) ensure effective isolation of potential acid forming material in rock dumps;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Measures to effectively isolate potential acid forming material in rock dumps is described in section 4.3.3 of the WRMP. However, it was stated that both PAF and NAF are stockpiled in Cell 1 (PAF) which is contrary to Table 5 and the material handling flowsheet in Figure 3 of the WRMP. Risk is created when using this material as differentiation between NAF and PAF relies on visual inspection. There is a risk where PAF, instead of NAF, is used for other works on site (which has occurred on one occasion when PAF was used to construct a clean water drain; it was retrieved on the same day and self-reported) (audit interview and observation).	**Non-Compliance**	Review the 2018 Draft Waste Rock Management Plan to ensure it covers all issues required by this Condition, consult with the relevant Authorities and seek DPIE approval for the Plan.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(f) include procedures for appropriate testing of potentially acid forming waste rock prior to it being bought to the surface;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.1 of the WRMP includes procedures for appropriate testing of potentially acid forming waste rock prior to it being bought to the surface.	**COMPLIANCE**			
		(g) include procedures for prioritising the relocation of potential acid forming material to a suitable underground locations prior to oxidation;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP includes procedures for prioritising the relocation of potential acid forming material to suitable underground locations prior to oxidation.	**COMPLIANCE**			
		(h) include procedures to ensure that material relocated underground does not, to the extent reasonable and feasible, further oxidise or cause impact to groundwater;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP includes procedures to ensure that material relocated underground does not, to the extent reasonable and feasible, further oxidise or cause impact to groundwater.	**COMPLIANCE**			
		(i) notwithstanding (e) above, trigger levels for any material that has oxidised to the extent that it cannot be placed underground without impacting groundwater quality and procedures for adequate capping and sealing of such material at the surface;	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP describes management plans for material that has oxidised to the extent that it cannot be placed underground without impacting groundwater quality	**COMPLIANCE**			
		(j) detail proposed neutralising options to be implemented for oxidising material stored or encapsulated aboveground; and	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 4.3.4 of the WRMP details proposed neutralising options (such as crushed limestone) to be implemented for oxidising material stored or encapsulated aboveground	**COMPLIANCE**			
		(k) where there is likely to be an extended time between placement of potential acid forming material underground, details of proposed methods to prevent oxidation of the material underground or to otherwise manage acid drainage to prevent impacts on groundwater.	1. *YTC Resources Ltd, Environmental Management Plan Waste Rock* , Revision 1.0, dated 15 July 2014.			Section 5 of the WRMP details proposed methods to manage acid drainage to prevent impacts on groundwater where there is likely to be an extended time between placement of potential acid forming material underground.	**COMPLIANCE**			
S3.44	Rehabilitation Objectives	The Proponent shall rehabilitate the site to the satisfaction of the Executive Director Mineral Resources. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (as reproduced in Appendix 4), and comply with the objectives in Table 7:	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			The approved MOP describes the rehabilitation plans for the Mine site. Section 4.3 of the MOP describes the Rehabilitation Objectives. Full rehabilitation of the site is not yet required as the mine is still operational.	**COMPLIANCE**			
S3.45	Progressive Rehabilitation	The Proponent shall carry out rehabilitation of the site progressively, that is, as soon as reasonably practicable after disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.			1. Previously disturbed areas have been revegetated.	The Auditor inspected all areas of the mine and observed that progressive rehabilitation (of previously cleared areas) has been undertaken.	**COMPLIANCE**			
		The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director Mineral Resources.	1. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. The MOP contains the Rehabilitation Management Plan. 2. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP* ", dated 27 February 2017.			Correspondence verifying that the 2017 version of the MOP was approved by DRE was sighted during the Audit.	**COMPLIANCE**			
		This plan must: (a) be prepared in consultation with the Department, OEH, EPA, DPI Water and CSC;	1. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP* ", dated 27 February 2017.			CSC has not been consulted during the preparation of the MOP (and therefore the rehabilitation action plan. The most recent version of the MOP / rehab management plam (submitted for approval on 6 Feb 2020) has been prepared in consultation with these agencies.	**Non-Compliance**	Ensure that all relevant agencies are consulted during the preparation of the MOP.	The 2019 MOP was submitted to BCD, DPE Compliance, Resources Regulator, EPA, Natural Resources Access Regulator and Cobar Shire Council for consultation. The MOP was approved by the Resources Regulator on 28 Feb 2020.	Completed.
S3.46	Rehabilitation Management Plan	(b) be submitted to the Executive Director Mineral Resources for approval prior to carrying out development on the site under this approval;	1. Letter from NSW Trade and Investment - Resources and Energy (M Young) to Hera Resources titled "*Mining Lease No. 1686 - Mining Operations Plan Approval* " dated 14 June 2013. The letter approves the MOP verions 3.1 (dated 21 May 2013).			Correspondence verifying that the original MOP was approved by DRE was sighted during the Audit.	**COMPLIANCE**			
		(c) be prepared in accordance with any relevant DRE guideline;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			There are no current DRE rehabilitation management plan guidelines	**Noted**			
		(d) outline the procedures to be implemented to achieve the rehabilitation objectives in condition 44;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 5 of the MOP describes implementation of the Rehabilitation Strategy.	**COMPLIANCE**			
		(e) describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			The biodiversity off-set area is remote from the mine, therefore rehabilitation of the mine site cannot be integrated with the implementation of the rehabilitation actions to be undertaken on the mine site.	**Not Triggered**			
		(f) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 6 of the MOP describes the performance and completion criteria of the Rehabilitation Strategy.	**COMPLIANCE**			
		(g) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 5 of the MOP describes implementation of the Rehabilitation Strategy.	**COMPLIANCE**			
		(h) include interim rehabilitation where necessary to minimise the area exposed for dust generation;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 7.2 .6 of the MOP describes the proposed rehabilitation activities that will be implemented over the life of the mine to minimise dust generation.	**COMPLIANCE**			
		(i) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.			Section 8 of the MOP describes the monitoring and reporting that will be undertaken in relation to the Rehabilitation Strategy.	**COMPLIANCE**			
		(j) build, to the maximum extent practicable, on the other management plans required under this approval.	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. Appendix 3 provides copies of consultation correspondence with DPI, OEH, DRE and the EPA.				**Noted**			
S4.1		Within 3 months of the date of project approval, the Proponent shall notify in writing the owners of any privately-owned land within two kilometres of the approved blasting on site that they are entitled to request an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated.	1. *Independent Environmental Audit, Hera Resources Pty ltd* , Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**			
S4.2	Notification of Landowners	Within two weeks of obtaining monitoring results showing: (1) an exceedance of any relevant noise criteria in Schedule 3, the Proponent shall notify affected landowners and/ or tenants in writing of the exceedance, and provide regular monitoring results to each of these affected parties until the project is again complying with the relevant criteria; and				Noise exceedances have been recorded.	**Not Triggered**			
		(2) an exceedance of any relevant air quality criteria in Schedule 3, the Proponent shall send the affected landowners and/ or tenants a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time).	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC. 2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC. 3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC. 4. Notice of HVAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC. 5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC. 6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 7. Notice to EPA of visible dust generation on tailings dam - incident report - (16 September 2019) . 8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC.	J Thompsn: As per the incident reports in 2016, 2017 and 2018 copies were not supplied to land holders as no land holders were impacted. The land holders are more than 2km from site and therefore have not be affected by the dust .	No land holders were impacted by dust emissions from the site during the Audit Period.	**Not Triggered**			
S4.3	Independent Review	If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land. If the Secretary is satisfied that an independent review is warranted, then within two months of the Secretary's decision the Proponent shall: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: (i) consult with the landowner to determine his/ her concerns; (ii) conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and (iii) if the project is not complying with these criteria then identify measures that could be implemented to ensure compliance with the relevant criteria. (b) give the Secretary and landowner a copy of the independent review.		1. J.Thompson 19 November 2019. No requests for independent reviews have been received..		No requests for independent reviews have been received..	**Not Triggered**			
S4.4		If the independent review determines that the project is complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.		1. J.Thompson 19 November 2019. No requests for independent reviews have been received..		No requests for independent reviews have been received..	**Not Triggered**			
S4.5		If the independent review determines that the project is not complying with the relevant criteria in Schedule 3, then the Proponent shall: (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until the project complies with the relevant criteria; or (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Secretary.		1. J.Thompson 19 November 2019. No requests for independent reviews have been received..		No requests for independent reviews have been received..	**Not Triggered**			

S5.1	Environmental Management Strategy	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. The strategy must:	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			An Environmental Management Strategy has been prepared.	COMPLIANCE			
		(a) be submitted to the Director-General for approval prior to the commencement of Mining activities;				While the first version of the EMS was approved by DPE, the current version has not been reviewed and approved by the Department.	Non-Compliance	Ensure that the current version of the Environmental Management Strategy is approved by DPE.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(b) provide the strategic framework for environmental management of the project;	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			The EMS provides a simple framework for the management of the environmental obligations associated with the Project. The framework presented in the EMS is based on ISO 14001. The framework as implemented is not sufficient to adequately manage Hera's compliance obligations under this Approval.	Non-Compliance	Implement the Environmental Management System Recommendations described in Section 7.1 of this report.	Hera will commit to implementing the EMS as described in the IEA.	4 April 2021.
		(c) identify the statutory approvals that apply to the project;	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			Section 3 of the EMS discusses the Planning Approval applicable to the mining operations.	COMPLIANCE			
		(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			Section 9 of the EMS describes the key roles and responsibilities.	COMPLIANCE			
		(e) describe the procedures that would be implemented to: · keep the local community and relevant agencies informed about the operation and environmental performance of the project; · receive, handle, respond to, and record complaints; · resolve any disputes that may arise during the course of the project; · respond to any non-compliance; and · respond to emergencies; and	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			Section 8 of the EMS describes the complaints management and dispute resolution processes.	COMPLIANCE			
		(f) include: · copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and · a clear plan depicting all the monitoring to be carried out in relation to the project.	1.*Environmental Management Strategy*, Version 3.0, dated 12 November 2017.			Section 5.2 of the EMS references the management plans required by the Planning Approval.	COMPLIANCE			
S5.2	Adaptive Management	The Proponent shall assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.					Noted			
		Where any exceedance of these criteria and/or performance measures has occurred, the Proponent shall, at the earliest opportunity: (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC. 2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC. 3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC. 4. Notice of HvAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC. 5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC. 6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 7. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 9. Notice of WAD exceedance and incident report - (20 September 2017) sent to DPE, DRE, EPA. 10. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1585504, dated13 June 2019.			The Auditor has reviewed exceedance (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates that all exceedances were reported to DPE, DRE, EPA and where required to Council.	COMPLIANCE			
		(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and	1. Notice of WAD exceedance and inci2. dent report - (20 September 2017) sent to DPE, DRE, EPA. The report relates to a failure to collect and analyse Wad samples (due to equipment loss in a laboratory fire and the subsequent detection of a WAD exceedance. 2. Notice of WAD exceedance and incident report - (24, 25 and 26 April 2018) sent to DPE, DRE, EPA. The report relates to the detection of a WAD exceedances.			The Auditor has reviewed exceedance (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates incident reports were prepared and issued to the relevant Authorities.	COMPLIANCE			
		(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.;				DPE has not instructed Hera to implement and remediation strategies during the Audit Period.	Not Triggered			
S5.3	Management Plan Requirements	The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data;	1. YTC Resources Ltd, Environmental Management Plan Noise Management, Revision 5, dated 19 August 2013. 2. YTC Resources Ltd, Environmental Management Plan Blast, Revision 4, dated 30 August 2012. 3. YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas, Revision 3, dated 28 August 2012. 4. Draft Water Management Plan 2018, Version 6, dated November2019. 5. Biodiversity Management Plan (incorporating the Biodiversity Off-set Strategy) for the Hera Mine, prepared by RW Corkery, dated June 2016. Note that this plan incorporates the Biodiversity Off-set Strategy. 6. YTC Resources Ltd, Environmental Management Plan Aboriginal Cultural Heritage, Revision 1.1, dated 19 August 2012. 7. Traffic Management Plan, Version 3.0, dated 14 May 2016. 8. Environmental Management Plan Hazardous Materials, Version 1.0, dated 9 April 2013. 9. YTC Resources Ltd, Environmental Management Plan Waste Rock, Revision 1.0, dated 15 July 2014. 10. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. The MOP incorporates the Rehabilitation Management Plan. 11. Environmental Management Strategy, Version 3.0, dated 12 November 2017.			With the exception of the MOP and the TMP, current versions of the Plans (that is those that were approved by DPE) were prepared in 2012/13. The plans were prepared in accordance with the guidelines relevant in 2013 and reference, where applicable baseline data.	COMPLIANCE			
		(b) a description of: · the relevant statutory requirements (including any relevant approval, licence or lease conditions); · any relevant limits or performance measures/criteria; and · the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;				With the exception of the MOP and the TMP, current versions of the Plans (that is those that were approved by DPE) were prepared in 2012/13. Variations to the Project Approval have been approved during that time. Those modifications are in general not fully reflected in most of the plans.	Non-Compliance	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to reflect changes in the approval, legislative changes and developments in environmental management standards applicable to gold mining operations.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
		(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;				each plan contains a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures.	COMPLIANCE			
		(d) a program to monitor and report on the: · impacts and environmental performance of the project; and · effectiveness of any management measures (see (c) above);				Each plan contains a program to monitor and report on the: · impacts and environmental performance of the project; and · effectiveness of any management measures.;	COMPLIANCE			
		(e) a contingency plan to manage any unpredicted impacts and their consequences;				Each plan contains a contingency plan to manage any unpredicted impacts and their consequences.	COMPLIANCE			
		(f) a program to investigate and implement ways to improve the environmental performance of the project over time;				The plans in general do not provide a program to investigate and implement ways to improve the environmental performance of the project over time.	Non-Compliance	During the review and revision of each plan required under this Approval, develop a program to investigate and implement ways to improve the environmental performance of the project over time.	This will be addressed via the EMS.	4 April 2021.
		(g) a protocol for managing and reporting any: · incidents; · complaints; · non-compliances with statutory requirements; and · exceedances of the impact assessment criteria and/or performance criteria; and				Each plan describes a protocol for managing and reporting any: · incidents; · complaints; · non-compliances with statutory requirements; and · exceedances of the impact assessment criteria and/or performance criteria.	COMPLIANCE			
		(h) a protocol for periodic review of the plan.				Each plan describes a protocol for periodic review of the plan.	COMPLIANCE			
S5.4	Annual Review	By the end of December each year, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017. 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019. 4. Letter from DPE K O'Reilly) to Hera (J Thompson) titled "*Hera Mine - PA 10_0191 (MOD 4) Annual Environmental Review Report 16 May 2016 to 15 May 2017* ", dated 26 September 2017.			Letters approving each of the Annual Reviews from DPE were sighted.	COMPLIANCE			
		This review must: (a) describe the works (including rehabilitation) that were carried out in the previous year, and the works that are proposed to be carried out over current year;				The Annual Reviews submitted for 2016, 2017 and 2018 described the works undertaken during the respective reporting years, and a statement regarding the work proposed for the coming year, including rehabilitation works.	COMPLIANCE			
		(b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against: · the relevant statutory requirements, limits or performance measures/criteria; · the monitoring results of previous years; and · the relevant predictions in the EA;				The Annual Reviews submitted for 2016, 2017 and 2018 included reviews of the monitoring results against the emission / performance criteria specified in the Project Approval and the Environment Protection Licence.	COMPLIANCE			
		(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;				The Annual Reviews submitted for 2016, 2017 and 2018 did not clearly identify all non-compliances against the emission / performance criteria specified in the Project Approval and the Environment Protection Licence. For example Section 4.3 of the 2017/18 Environmental Review states "*There were several WAD Cyanide incidents during the reporting period*". The non-compliances were not specifically identified, nor was there any discussion of actions taken by Hera in response to the non-compliances.	Non-Compliance	Provide full details of all non-compliances against both the Planning Approval and EPL in the Annual Review. Provide details of actions taken in relation to each non-compliance.	Noted - In the future, Hera will ensure the Annual Review provides full details of non-compliances. Hera will identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance.	Completed.
		(d) identify any trends in the monitoring data over the life of the project;				The Annual Reviews submitted for 2016, 2017 and 2018 identified general trends in emission / performance monitoring	COMPLIANCE			
		(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and				Section 4 of the Annual Reviews provide an assessment of actual against predicted impacts (as presented in the EIS).	COMPLIANCE			
		(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.				The Annual Reviews submitted for 2016, 2017 and 2018 identified what measures will be implemented over the next year to improve the environmental performance of the project.	COMPLIANCE			
S5.5	Revision of Strategies Plans and Programs	Within 3 months of: (a) the submission of an annual review under condition 3 above; (b) the submission of an incident report under condition 5 below; (c) the submission of an audit report under condition 8 below; and (d) any modifications to this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.	1. Details (list) of all plans updated and reissued during the Audit period			While there are a number of draft management plans, it appears that, generally, the 2012 / 13 plans are the current version in use. The review and revision of all management plans required under this Approval is overdue.	Non-Compliance	All management plans required under this Approval (including the Environmental Management Strategy) should be thoroughly reviewed and revised to reflect changes in the approval, legislative changes and developments in environmental management standards applicable to gold mining operations.	Consultation and submission of all Management Plans is on schedule and if an update is required, they will be submitted within three months of this IEA.	4 July 2020.
S5.6	Community Consultative Committee	The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary. This CCC must be operating within six months of this approval.	1. Minutes of all CCC meetings held during the Audit Period			Quarterly meetings of the Community Consultative Committee (CCC) are hosted by Hera. Minutes of CCC meetings were sighted . It was stated the CCC operates in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects.	COMPLIANCE			
S5.7	Incident Reporting	The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.					COMPLIANCE			
S5.8	Regular Reporting	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.	1. http://aureliametals.com/projects/hera-nymagee/reports			The Hera Mine website contains copies of Annual Reviews for 2016, 2017, 2018 and 2019. The website also contains copies of monthly environmental monitoring reports from March 2015 to August 2019.	COMPLIANCE			

SS.9	Independent Environmental Audit	Within one year of commencement of development on the site under this approval, and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. The audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/ or any assessment, plant or program required under the abovementionedapprovals.	1. http://aureliametals.com/projects/hera-nymagee/audits 2. Independent Environmental Audit, Hera Resources Pty ltd, Hera Project, NUMAGEE NSW', September 2016.			Copies of the 2013 and 2016 Independent Environmental Audits are available on the Hera Mine Website. The site based elements of the 2016 Independent Environmental Audit were undertaken between 5 and 8 September 2016. The Audit report was finalised and issued to Hera on 13 April 2017. The audit report satisfies the requirements of this Condition.	COMPLIANCE			
SS.10		Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	1. Email from Hera (J Thompson) to DPE submitting the 2016 IER	J Thompson : the final 2016 Audit Report was submitted to Hera on 14 March 2017 (start of the 6 week period as this was the date the audit was completed) and it was submitted to DPIE on 18 Apr 2016		The previous IEA Report was submitted within 6 weeks of completion of the audit.	COMPLIANCE			
SS.11	Access to Information	Prior to the commencement of construction on the site, the Proponent shall: (a) make copies of the following publicly available on its website: (i) the documents referred to in condition 2 of Schedule 2; (ii) all relevant statutory approvals for the project; (iii) all approved strategies, plans and programs required under the conditions of thisapproval; (iv) a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; (v) a complaints register, which is to be updated on a monthly basis; (vi) minutes of CCC meetings; (vii) the annual reviews required under this approval; (viii) any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; (ix) any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	1. http://aureliametals.com/projects/hera-nymagee/			The documents and records required by this Condition have been uploaded to the Hera website, except for the Mining Operations Plan (note that the appendices to that plan have been uploaded.	Non-Compliance	Ensure that all required plans (including the current version of the MOP) are loaded on the corporate website.	The only document missing at the time of the audit was the approved MOP. This was uploaded to the website on 7 Feb 2020. In the future, Hera will ensure all required documentation is uploaded to the website without delay	Completed.
Condition Reference	**Short Title**	**Condition**	**Documents Reviewed**	**Interviews / Conversations**	**Inspections / Observations**	**Assessment**	**Compliance Finding**	**Recommendation**	**Hera Resources Action Plan**	**Hera Action Due Date**
A1.1		This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2: Construction of an underground gold mine, processing plant, tailings storage facility, and ancillary infrastructure in accordance with Department of Planning project approval 10_0191.					Noted			
A1.2	Administrative Conditions	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. Scheduled Activity Fee Based Activity Scale > 100000 - 500000 T extracted, processed or stored		1. J. Thompson 20 November 2019. The mine has not exceeded the ore processing or concentrate transport limits during the audit period.		The corporate annual reports and Annual Reviews provide a summary of production data for each year. These were: 2017 Financial Year: 368,086 tonnes of ore processed, 32,308 tonnes of concentrate transported from site. 2018 Year: 407,131 tonnes of ore processed, 40,756 tonnes of concentrate transported from site. 2019 Year: 468, 358 tonnes of ore processed, 31,206 tonnes of concentrate transported from site.	COMPLIANCE			
A1.3							Not Used			
A2.0		The licence applies to the following premises: Hera Mine Site					Noted			
A3.0	Administrative Conditions	This licence applies to all other activities carried on at the premises, including: Chemical Storage, Electricity Generation and Sewage Treatment					Noted			
A4.1	Administrative Conditions	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.					Noted			
P1.1	Utilisation Areas	The following points referred to in the table (*see Table in EPL on pg 7*) are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.					Noted			
P1.2		The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids of liquids to the utilisation area.					Noted			
P1.3		The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.					Noted			
L2.1	Pollution of Waters	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019,			The 2016/7 Annual review reported that two discharges from Licence Point 3 exceeded a number of water quality parameters identified in EPL 20179. The discharges occurred on 20 July 2016 and 16 December 2016 and were reported to the DPE, EPA and DRE.	Non-Compliance	Investigate the cause of any discharge from site that exceeds any discharge criterion and identify and implement appropriate mitigation strategies.	All non-compliances have been reported to the EPA and will continue to be reported. All non-compliances are investigated and solutions implemented as required.	Completed.
L2.2	Concentration Limits	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.					Noted			
L2.3		To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.					Noted			
L2.4		Water and/or Land Concentration Limits (refer to Tables in Condition L2.4)	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.		1. Water monitoring results covering the Audit Period for Licenced Monitoring Points 1,2 ,3 and 4	During the 2019 reporting year on 3 occasions the cyanide destruction circuit failed and cyanide exceeding the licence limit of 10mg/l was discharged to the process water ponds. During the 2018 reporting year concentrations of weak acid dissociable (WAD) cyanide in discharges from Licence Point 1 and Licence Point 2 exceeded limits on a number of occasions. During the 2017 reporting year there were two non-complaint discharges from Point 3. Water quality concentration limit exceedances following heavy storm event. Pumps were set up to empty the sediment basin to reduce the amount of water discharged.	Non-Compliance	Review the investigations relating to the WAD Cyanide non-compliances to determine if there are systemic issues in relation to cyanide level management in the process water system.	A review of cyanide management in the Process Plant will be conducted.	4 April 2021.
L3.1	Waste	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence under the Protection of the Environment Operations Act 1997. This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environmental protection licence under the Protection of the Environment Operations Act 1997.	1. *Environmental Management Plan Hazardous Materials* , Version 1.0, dated 9 April 2013.		1. No evidence of off-site waste received was sighted during the Audit. 2. The mine is remote and not a practical destination for waste disposal.	1. No evidence of off-site waste received was sighted during the Audit.	COMPLIANCE			
L4.1	Noise Limits	Noise generated at the premises must not exceed the noise limits presented in the table below. Locations R1 to R4 in the table L4.1 are those described in the Noise and Vibration Assessment, September 2011, prepared by Spectrum Acoustics Pty Ltd for the Hera Project, via Nymagee, Environmental Assessment. NOTE: Noise generated by the project is to be measured in accordance with conditions L4.2 to L4.6 below.	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019.			No noise exceedances were detected over the 2018/9 reporting period. No noise exceedances were detected over the 2017/8 reporting period. No noise exceedances were detected over the 2016/7 reporting period.	COMPLIANCE			
L4.2		For the purposes of the conditions of this licence: • Day is defined as the period from 7am to 6pm; and • Evening is defined as the period 6pm to 10pm. Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays. • LAeq(15 minute) is defined as the continuous 'A' weighted sound pressure level-the energy average of the noise measured over a 15 minute period; and • LA1(1 minute) is defined as the sound pressure level exceeded for one percent of a 1 minute measurement period.					Noted			
L4.3		The noise limits set out in condition L4.1 apply under all meteorological conditions except for any one of the following: a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or b) Stability category G conditions and wind speeds greater than 2 metres/second at 10 metres above ground level;	1. Plan showing location of all Noise Monitoring Locations 2. Noise monitoring reports for the past three years				Noted			
L4.4		For the purposes of condition L4.3: a) The meteorological data to be used for determining meteorological conditions is the data recorded by the on-site meteorological weather station at the Hera project site at Nymagee. b) Temperature invension will be assessed by use of the sigma-theta process as outlined in Appendix E4 of the NSW Industrial Noise Policy (INP).	1. Excel Spreadsheet titled "*Daily Summary (22).csv* ". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.			Weather station monitoring results for the Audit Period were sighted by the Auditor. The weather station satisfies the requirements of the Approved Methods for Sampling Air Pollutants in New South Wales Guidelines.	COMPLIANCE			
L4.5		For the purposes of determining the noise generated at the premises Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing, must be used.	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The noise monitoring equipment used by Hera's consultants complies with AS IEC61672.1-2004 and AS IEC61672.2-2004 (and current EPA guidelines)	COMPLIANCE			
L4.6		To determine compliance: a) With the LAeq(15 minute) noise limits in condition L4.1, the noise monitoring equipment must be located: • within 30 metres of a dwelling façade but not closer than 3 metres where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; • approximately on the boundary where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises; • within approximately 50 metres of the boundary of a National Park or a Nature Reserve. b) With the LA1(1minute) noise limit in Condition L4.1,the noise monitoring equipment must be located within 1 metre of the dwelling facade. c) The noise monitoring equipment must be located in a position that is: • at the most affected point at a location where there is no dwelling at the location;or • at the most affected point within an area at a location prescribed by conditions L4.6(a)or L4.6(b).	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The sampling locations and sampling procedures used by Hera's noise consultants meet the requirements of the EPL.	COMPLIANCE			
L4.7		A breach of this Environment Protection Licence will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition L4.1 is detected: • at a location other than an area prescribed by Conditions L4.6(a) or L4.6(b);and/or • at a point other than the most affected point at a location.					Noted			
L4.8		For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.	1. *Hera Gold Mine EPL attended noise monitoring* (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants.			The sampling locations and sampling procedures used by Hera's noise consultants meet the requirements of the EPL.	COMPLIANCE			
L5.1		Blasting condition L5.1 applies to all receiver locations. Blasting overpressure and ground vibration. The proponent must ensure that the blasting on site does not cause exceedances of the criteria in the Table L5.1. Note: a.Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019*; dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	COMPLIANCE			

L5.2	Blasting	For the purpose of Condition L5.1: • Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays; • Evening is defined as the period from 6pm to 10pm; and • Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.					Noted			
L5.3		Surface Blasting operations at the premises may only take place between 9:00am-5:00pm Monday to Saturday. Surface Blasting is not permitted on Sundays or public holidays. Surface Blasting outside the hours specified can only take place with the written approval of the Environment Protection Authority. Underground Blasting may be undertaken at any time subject to Condition L5.1.		1. Audit interview (J Thompson): no above ground blasting has been undertaken during the Audit Period.		No above ground blasting has been undertaken during the Audit Period.	Not Triggered			
L5.4		A breach of the licence will still occur where air blast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in Condition L5.1 at any "noise sensitive locations" other than the locations identified in the above conditions.					Noted			
L5.5		The Proponent may exceed the limits in Condition L5.1 if it has a written negotiated blasting agreement with any landowner for higher blasting overpressure and vibration limits, and a copy of the agreement has been forwarded to the EPA.					Noted			
L5.6		Air blast overpressure or ground vibration as a result of blasting at the premises must not exceed levels that cause cosmetic or other damage, and in relation to Condition L5.5 only if specifically allowed for in the written agreement between the proponent and the landholder.					Noted			
L6.1	Odour	The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises. Note: Section 120 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour. No condition of this licence identifies a potentially offensive odour for the purposes of Section 120 of the Protection of the Environment Operations Act 1997.	1. Complaints Register (http://aureliametals.com/projects/hera-nymagee/complaints-register)		1. No offensive odours at or near the site boundaries were detected by the Auditor during the site inspection.	No odour complaints have been received by Hera during the Audit Period.	COMPLIANCE			
O1.1	Operating Conditions	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.			1. At the time of the Audit inspection, all elements of the plant were operational, waste storage areas, chemical and fuel storage areas appeared to be well organised and operated.	During the audit, the Auditor did not identify any areas of concern in relation to the general operations and management of the mine.	COMPLIANCE			
O2.0	Maintenance	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.		Interview T. Cox Maintenance Supervisor: 1. Pronto (asset and facility management software) is used to plan and track routine maintenance of fixed and moving plant. 2. Hera takes steps to ensure that all the plant and equipment used at the site is maintained in a proper and efficient condition. These steps include: - The mining contractor (PYBAR) is contracted to perform all mining vehicle plant maintenance functions on site and Hera maintains surface plant and equipment; - All equipment on site has to be MDG15 compliant (audit interview); - An equipment maintenance register (sighted for both Hera and PYBAR). - A maintenance schedule system is in place and current for plant (see above). - The concentrate transporter's (KPC Bulk) trucks are under a Maintenance Management system with the NHVR (National Heavy Vehicle Register) which requires them to be audited every twelve months.	1. Demonstration of Pronto software. The auditor witnessed the processes used to setup, manage and monitor fixed and mobile plant maintenance. 2. Fixed and mobile plant sighted during the audit was operational and appropriately maintained.	The mine operates a popular maintenance management system. Maintenance records sighted (on the Pronto System) demonstrated that a comprehensive proactive maintenance program is in place.	COMPLIANCE			
O3.0	Dust	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises. All dust control equipment must be operable at all times with the exception of shutdowns required for maintenance. Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.	1. *YTC Resources Ltd, Environmental Management Plan Air Quality and Greenhouse Gas* , Revision 3, dated 28 August 2012. 2. *Air Quality and Greenhouse Gas Management Plan* Version 2.0 / Revision 4, dated May 2015. 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017* ; dated 14 August 2017 4. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 5. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.		1. During the site inspection, the Auditor observed: - Water trucks operating on the mine access road - that application of molkasses (sealant) on site access roads and roads in an around the process plant. - the use of water sprays on stockpiles and transfer conveyors. - rehabilitation of formerly disturbed areas.	The Air Quality and Greenhouse Gas Management Plan is being implemented. Appropriate dust controls are being used. However dust deposition and PM10 measurements from the Audit Period showed elevated dust levels. It is likely that these exceedances were a result of the drought conditions being experienced and are not indicative of the impact of the mine operations.	Non-Compliance	It is recommended that Hera consider placement of additional dust deposition gauges outside the site boundaries to provide more data on background dust levels.	Hera will look into additional Dust Deposition Gauges outside the site boundaries with an Air Quality Consultant.	31 December 2020.
O4.1	Bunding	All above ground storage facilities containing flammable and combustible liquids must be bunded in accordance with Australian Standard AS 1940-2004. Sodium Cyanide and other Toxic Chemicals must be stored in accordance with the requirements of AS/NZS 4452 - The Storage and Handling of Toxic Substances.	1. *Environmental Management Plan Hazardous Materials* , Version 1.0, dated 9 April 2013. 2. Letter from DPE (H Reed) to Hera (S Haures) titled *"Hera Gold Mine (10_0191) Hazardous Materials Management Plan"* , dated 1 May 2013.		1. All above ground storage bunds facilities inspected during the Audit meet the requirements of AS 1940. Photo #11 shows an example of a chemical storage tank and bund.	Section 5.8 of the HMMP lists the cyanide controls to be used which are consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Code).	COMPLIANCE			
O4.2	Stormwater - Construction Phase	A stormwater management scheme must be prepared for all aspects of the construction phase of the development and must be implemented. Implementation of the scheme must mitigate the impacts of stormwater runoff from and within the premises during construction. The scheme should be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the scheme should be consistent with the guidance contained in Managing Urban Stormwater: Council Handbook (available from the EPA).				No construction works were undertaken during the Audit Period.	Noted			
O4.3	Stormwater - Operations Phase	A stormwater management scheme must be prepared for the development and must be implemented. Implementation of the scheme must mitigate the impacts of stormwater runoff from and within the premises following the completion of construction activities. The scheme should be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the scheme should be consistent with the guidance contained in Managing Urban Stormwater: Council Handbook (available from the EPA).	1. Aurelia - Hera Gold WMP Water Management Plan 2016, prepared by GHD. 2. Draft Water Management Plan 2018, Version 6, dated November 2019.			A water management plan has been prepared and implemented at the site. The plan meets the requirements of this Condition.	COMPLIANCE			
M1.1	Monitoring Records	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.					COMPLIANCE			
M1.2		All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form;	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain ofcustody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	COMPLIANCE			
		b) kept for at least 4 years after the monitoring or event to which they relate took place; and	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain ofcustody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	COMPLIANCE			
		c) produced in a legible form to any authorised officer of the EPA who asks to see them.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain ofcustody records, sampling records and laboratory test reports.				Noted			
M1.3		The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected thesample.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain ofcustody records, sampling records and laboratory test reports.			Noise, surface water, groundwater and air quality monitoring results satisfying the requirements of the Condition were sighted.	COMPLIANCE			
M2.1	Monitoring Requirements	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns: (table on page 10).	1. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017; dated 14 August 2017 2. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018; dated 16 August 2018 3. Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019; dated 14 August 2019. 4. 1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Refer to Conditions M2.2 and M2.3 below.	Non-Compliance	Refer to Condition M2.3 below.	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	4 April 2021.
M2.2	Air Monitoring Requirements	Point 24 Nitric Oxide, Yearly Method TM-11 Point 39 Nitric Oxide, Yearly Method TM-11	1. Nitric Oxide monitoring results covering the Audit Period: Ektimo Emission Teste Reports, Numbers R002251 (January 2016), R003726 (March 2017), R004870 (October 2017) and R006532 (October 2018).	1. J Thompson: The stack monitoring must be conducted oncer per reporting period. Reporting Period is 18 Mar to 17 Mar hence why two lots of sampling were completed in 2017 calendar year.		The required stack emissions monitoring was undertaken,	COMPLIANCE			
M2.3	Water Monitoring Requirements	Refer to Tables in Condition M2.3	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			2018/19: On 5 occasions testing for Weak Acid Dissociable (WAD) Cyanide within the detox circuit when discharging to the tailings storage facility, was not undertaken. 2017/18: Licence Points 1 and 2 were not sampled during daily discharge. Sample Point 27 were not tested quarterly for electrical conductivity	Non-Compliance	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	Prepare a document that details all environmental monitoring required (for compliance purposes) include details of sampling location, sample type, identify person (or organisation) responsible for sampling and analysis. Set up a system to automatically notify the Environmental Manager of up-coming sampling events.	4 April 2021.
M3.1	Testing Methods	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing takingplace.	1. Nitric Oxide monitoring results covering the Audit Period: Ektimo Emission Teste Reports, Numbers R002251 (January 2016), R003726 (March 2017), R004870 (October 2017) and R006532 (October 2018).			All laboratory analysis is undertaken by NATA registered laboratories using appropriate test methods.	COMPLIANCE			
M3.2		Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests areconducted.	1. Hera Gold Mine EPL attended noise monitoring (various reports covering 2017, 2018 and 2019), prepared by EMM Consultants. 2. Water monitoring records for 217, 2018 and 2019, including sampling sheets, chain of custody documentation and laboratory test reports. 3. Dust deposition monitoring records for 2017, 2018 and 2019. The records included chain ofcustody records, sampling records and laboratory test reports.			All laboratory analysis is undertaken by NATA registered laboratories using appropriate test methods.	COMPLIANCE			

M4.1	Weather Monitoring	The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in the condition below.	1. Excel Spreadsheet titled "*Daily Summary (22).csv* ". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019. 2. Environdata Field Calibration Report for the weather station (dated 21/2/2108).			Weather station monitoring results for the Audit Period were sighted by the Auditor.	COMPLIANCE			
M4.2		For monitoring point 43 the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.	1. Excel Spreadsheet titled "*Daily_Summary (22).csv* ". The spreadsheet contained the weather station outputs from 9 September 2016 to 9 November 2019.			Weather station calibration reports were sighted by the Auditor. Weather station monitoring results for the Audit Period were sighted by the Auditor.	COMPLIANCE			
M5.1		The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			A detailed complaints register is maintained. Note that summary version that does not identify complainant details is located on the complaint website.	COMPLIANCE			
M5.2	Complaints	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			A detailed complaints register is maintained. Note that summary version that does not identify complainant details is located on the complaint website. a) The register includes the date and time of the complaint. b) The method by which the complaint was made is recorded e.g. email, telephone, in person. c) The personal details of the complainant such as full name, address and phone number are recorded if provided by the complainant. d) The nature of the complaint is recorded. e) & "Corrective Action" column records the action taken by the licensee in relation to the complaint. Additional columns record the name and position of the person responsible for the corrective actions as well as the date of the corrective action. Follow-up contact is recorded in the "comments" column. f) All complaints sighted (except the test call made as part of the July 2013 compliance audit) have required corrective actions.	COMPLIANCE			
M5.3		The record of a complaint must be kept for at least 4 years after the complaint was made.	1. Complaints Register (internal version) in excel format - the Register contains full details of all complaints received.			The records of complaints date back to 2011.	COMPLIANCE			
M5.4		The record must be produced to any authorised officer of the EPA who asks to see them.					Noted			
M6.1	Telephone Complaints Line	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.			1. The telephone complaint line number is listed at the site gate and on the site website.	A complaints telephone line was operational at the time of the audit.	COMPLIANCE			
M6.2		The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	http://aurelianmetals.com/projects/hera-nymagee/		1. Mine site signage provides details of the complaints telephone number. Refer to Photo #12.	Details of the complaints phone line number are provided on the company website and is advertised on the signage at the entrance to the mine.	COMPLIANCE			
M6.3		The preceding two conditions do not apply until 3 months after the date of the issue of this licence					Noted			
R1.1	Annual Returns	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices.	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Annual Returns have been sent to the EPA for each year covered by the Audit Period.	COMPLIANCE			
R1.2		An Annual Return must be prepared in respect of each reporting period, except as provided in the below conditions.	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			Annual Returns have been sent to the EPA for each year covered by the Audit Period.	COMPLIANCE			
R1.3		Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.					Noted			
R1.4		Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.					Noted			
R1.5		The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	1. EPA Public Register https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?id=20179&periodid=55091&searchrange=licence&option=noncompliance&range=POEO%20licence			The 2016/7 Annual Return was received by the EPA on 17 May 2019 (61 days after the end of the reporting period). The 2017/8 and 2018/9 Annual Returns were received within 60 days of the end of the reporting periods.	Non-Compliance	Ensure that the Annual Returns are received by the EPA within the 60 day period required by the EPL.	During the audit period, one Annual Return was submitted one day late. Future Annual Returns will be submitted by eConnect EPA or registered post slips recorded and within 60 days of reporting period ending.	Completed.
R1.6		The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	1. 2016 Annual Return 2. 2017 Annual Return 3. 2018 Annual Return.			Copies of the annual returns are kept on file at Hera.	COMPLIANCE			
R1.7		Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licenceholder.				The Annual Returns are prepared by the Environment Manager and signed by an appopropraite officer of the company.	COMPLIANCE			
R2.1	Notification of Environmental Harm	Notifications of Environmental Harm must be made by telephoning the Environment Line service on 131 555.	1. Incident Report to EPA dated 4 January 2017. 2. Email from EPA (Customer Feedback line) to Hera (J Thompson) titled "*04-Jan-2017 Customer Feedback for Call C0013E-2017* ", dated 22 November 2016. The email acknowledges the telephone report to the Pollution Line. 3. Email from Hera (J Thompson) to the EPA (D Stokes) titled "*Environmental Incident - 26 October 2016* ", dated 22 November 2016. The email refers to the telephone report to the Pollution Line.			A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA.	COMPLIANCE			
R2.2		The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred. Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	1. Incident Report to EPA dated 4 January 2017. 2. Email from EPA (Customer Feedback line) to Hera (J Thompson) titled "*04-Jan-2017 Customer Feedback for Call C0013E-2017* ", dated 22 November 2016. The email acknowledges the telephone report to the Pollution Line. 3. Email from Hera (J Thompson) to the EPA (D Stokes) titled "*Environmental Incident - 26 October 2016* ", dated 22 November 2016. The email refers to the telephone report to the Pollution Line.			A review of incidents over the audit period by the Auditor confirmed that relevant incidents have been reported to the EPA Pollution Line. Written reports have subsequently been provided to the EPA. Notifications (incident reports) were provided to the EPA on: - 4 January 2017 (incident 16 December 2016) sediment laden discharge during storm event from Point 3. The incident was reported on 4 January 2017. The delay in reporting related to the time required for off-site sample analysis.	Non-Compliance	Hera has submitted the required incident reports to the EPA, however due to delays, usually associated with lab testing, the 7 day reporting requirement has not been met. It is recommended that Hera request a modification to this EPL condition to modify the 7 day written report requirement to provide sufficient time for lab analysis to be completed.	The EPL will be amended to reflect Schedule 5, Condition 7 of the PA.	4 April 2021.
R3.1	Written Report	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or				No requests for reports have been received from the EPA in relation to mobile plant.	Not Triggered			
		b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.				No requests for reports have been received from the EPA in relation to mobile plant.	Not Triggered			
R3.2		The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.				No requests for reports have been received from the EPA in relation to mobile plant.	Not Triggered			
R3.3		The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters					Noted			
R3.4		The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified.				No requests for reports have been received from the EPA during the Audit Period.	Not Triggered			
R4.1	Fauna Injury or death	The licensee must report any incident of death or injury (including bogging or miring) of fauna (avian and terrestrial) associated with the tailings impoundments or tailings runoff dams by telephoning the EPA's Pollution line on 13 15 55 as soon as the licensee becomes aware of the incident. The licensee must provide written details of the notification with respect of the above condition to the EPA within 7 days of the date which the incident occurred.	1. Incident Report issued to the EPA in relation to a dead goat and a dead kangaroo found in the TSF, dated 17 September 2017.			The EPA was advised following the death of a kangaroo in the TSF in 2017.	COMPLIANCE			
G1.1	Copy of Licence	A copy of this licence must be kept at the premises to which the licence applies.				Electronic copy of the licence is maintained by Hera.	COMPLIANCE			
G1.2		The licence must be produced to any authorised officer of the EPA who asks to see it.					Noted			
G1.3		The licence must be available for inspection by any employee or agent of the licensee working at the premises.				Electronic copy of the licence is maintained by Hera and a copy of the licence has been uploaded to the company website.	COMPLIANCE			
G2.1	Signage	Each monitoring and discharge point must be marked by a sign that indicates the EPA point identification number.			1. The Auditor inspected all monitoring points. All licenced points were appropriately sign posted. Refer to Photo #13.		COMPLIANCE			
E1.1	Construction of Contaminated Storage Pond	The licensee must construct the proposed contaminated storage pond consistent with the presentation provided to the EPA and dated 26 August 2016, to meet the proposed design capacity for a contaminated structure of a 1 in 100, 72 hour storm event.	1. Letter from Hea (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond* ", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J THompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The contaminated water storage pond has been completed. The pond was sighted by the Auditor	COMPLIANCE			
E1.2		The proposed storage pond referred to in Condition E1.1 must be lined to meet the EPA's permeability requirement of 1 x 10-9 m/s or less with a recompacted clay liner of at least 900 mm in thickness (or alternatively geosynthetic liner of equivalence). Where the proposed liner will not meet the required permeability or thickness of at least 900 mm, and the natural geology of the site in conjunction with constructed clay liners is considered sufficient in meeting this requirement, an appropriately qualified person must be engaged to provide sufficient evidence in support of this to demonstrate the construction will meet the requirements outlined above and be adequate to prevent pollution of groundwater.	1. Letter from Hea (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond* ", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J THompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The contaminated water storage pond has been completed. The pond was sighted by the Auditor	COMPLIANCE			
E1.3		The licensee must complete the works required by Conditions E1.1 and E1.2 by 30 June 2017 and notify the EPA in writing upon completion of the works.	1. Letter from Hea (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond* ", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J THompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The pond construction was completed within the required timeline.	COMPLIANCE			
E1.4		The licensee must submit a report completed by an appropriately qualified person to certify that the contaminated storage pond has been constructed to meet the design specifications referred to in Conditions E1.1 and E1.2. The report must be submitted to the EPA by 11 August 2017.	1. Letter from Hea (J Thompson) to EPA titled "*Environment Protection Licence 20179 - 8 Special Conditions, E1 Construction of Proposed Contaminated Storage Pond* ", dated 9 June 2017. The letter confirms to the EPA that the contaminated storage pond construction has been completed and included details of the works (including design specifications) completed. 2. Letter from GHD (D Scott) to Hera (J THompson) titled "Hera Mine Sediment Basin Response to EPA)" dated 19 May 2016. The letter details the pond design specifications.		1. Inspection of the surface water management system, including the contaminated water storage pond.	The report was provided to the EPA on 9 June 2017.	COMPLIANCE			

Condition	Short Title	Condition	Documents Reviewed	Interviews / Conversations	Inspections / Observations	Assessment	Compliance Finding	Recommendation	Hera Resources Action Plan
1 (a)	Notice to Landholders	Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice.	1. *Independent Environmental Audit, Hera Resources Pty ltd* , Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**		
1 (b)		If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.	1. *Independent Environmental Audit, Hera Resources Pty ltd* , Hera Project, NUMAGEE NSW, September 2016.			The 2016 Audit noted that the nearest residential premises is over 2 km from the site and therefore this Condition is not triggered.	**Not Triggered**		
2(a)	Environmental Harm	The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any activities under this lease.	1. EPA Show Cause Notice relating to cyanide contaminated water leaks, EPA Reference 1580504, dated13 June 2019. 2. EPA Clean-up Notice 157818.			As a result of two (self reported by Hera) leaks of contaminated water, the EPA issue a Clean Up Notice and subsequently in response to their assessment that these incidents evidenced potential or actual Material Harm and were therefore potential breaches of Sections 64, 12 and 142A of the POEO Act.	**Non-Compliance**	The clean-up actions relating to the incidents have been completed - there are no further actions required.	Completed.
2(b)		For the purposes of this condition: (i) environment means components of the earth, including: (A) land, air and water, and (B) any layer of the atmosphere, and (C) any organic or inorganic matter and any living organism, and (D) human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in paragraphs (A)-(C). (ii) harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution, contributes to the extinction or degradation of any threatened species, populations or ecological communities and their habitats and causes impacts to places, objects and features of significance to Aboriginal people.					**Noted**		
3(a)	Mining Operations Plan	Mining operations must not be carried out otherwise than in accordance with a Mining Operations Plan (MOP) which has been approved by the Director-General	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. 2. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP", dated 27 February 2017.*			The MOP has been prepared and approved by DRE.	**COMPLIANCE**		
3(b)		The MOP must: (i) identify areas that will be disturbed by mining operations;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			Section 2.2 (Asset Register) describes the mine in terms of "Domains". Each of the Domains describe the areas of the site that are likely to be disturbed and therefore would be subject to rehabilitation in the future.	**COMPLIANCE**		
		(ii) detail the staging of specific mining operations;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			Section 2 of the MOP describes the proposed mining activities and includes descriptions of the exploration, construction and mining phases of the project.	**COMPLIANCE**		
		(iii) identify how the mine will be managed to allow mine closure;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			Section 2.3.9 of the MOP describes the progressive rehabilitation and closure of the site.	**COMPLIANCE**		
		(iv) identify how mining operations will be carried out in order to prevent and or minimise harm to the environment;	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			Section 3 of the MOP describes the environmental risks associated with the project and Section 3.2 describes how those risks will be mitigated.	**COMPLIANCE**		
		(v) reflect the conditions of approval under: • the Environmental Planning and Assessment Act 1979 • the Protection of the Environment Operations Act1997 • and any other approvals relevant to the development including the conditions of this lease; and • have regard to any relevant guidelines adopted by the Director-General.	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017.			The MOP is consistent with the Planning Approval and this Mining Lease.	**COMPLIANCE**		
3(c)		The leaseholder may apply to the Director-General to amend an approved MOP at anytime					**Noted**		
3(d)		It is not a breach of this condition if: (i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the Mining Act 1992, the Environmental Planning and Assessment Act 1979, Protection of the Environment Operations Act 1997, Mine Health and Safety Act 2004 I Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 I Coal Mine Health and Safety Regulation 2006 or the Occupational Health and Safety Act 2000; and (ii) the Director-General had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.					**Noted**		
3(e)		A MOP ceases to have effect 7 years after date of approval or other such period as identified by the Director-General					**Not Triggered**		
4(a)	Environmental Management Report	The lease holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise directed by the Director-General	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201 7*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 201 8*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.			The Annual Reviews (prescribed in the Planning Approval) are accepted as fulfilling the requirements of this Condition for the preparation of Annual Environmental Management Reports (AEMR). Annual Reports have been prepared and submitted each year covered by the Audit Period.	**COMPLIANCE**		
4(b)		The EMR must: (i) report against compliance with the MOP;	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201 7*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 201 8*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.			All Annual Reviews refer back to statements made in the MOP and state if they were in accordance with MOP and if not, why not.	**COMPLIANCE**		
		(ii) report on progress in respect of rehabilitation completion criteria;	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201 7*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 201 8*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.			The progress of rehabilitation against the plans in the MOP are reported in each of the Annual Reviews. See for example Section 8 of the 2018/19 AR.	**COMPLIANCE**		
		(iii) report on the extent of compliance with regulatory requirements; and	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201 7*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 201 8*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.			Section 6 of the (2018/19) Annual Review detailed performance against the environmental compliance obligations established under the Planning Approval and EPL.	**COMPLIANCE**		
		(iv) have regard to any relevant guidelines adopted by the Director-General	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 201 7*; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 201 8*; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019* ; dated 14 August 2019.				**Noted**		
5(a)	Environmental Incident Report	The lease holder must report any environmental incidents. The report must: (i) be prepared according to any relevant Departmental guidelines; (ii) be submitted within 24 hours of the environmental incident occurring	1. Notice of PM10 exceedance and incident report - (18 July 2018) sent to DPE, DRE, EPA, CSC. 2. Notice of PM10 exceedance and incident report - (19 April 2018) sent to DPE, DRE, EPA, CSC. 3. Notice of PM10 exceedance and incident report - (30 March 2018) sent to DPE, DRE, EPA, CSC. 4. Notice of HAS exceedance and incident report - (25 July 2017) sent to DPE, DRE, EPA, CSC. 5. Notice of PM10 exceedance and incident report - (22 November 2016) sent to DPE, DRE, EPA, CSC. 6. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA CSC.. 7. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 8. Notice of Dust Deposition exceedance and incident report - (September 2019) sent to DPE, DRE, EPA, CSC. 9. Notice of WAD exceedance and incident report - (20 September 2017) sent to DPE, DRE, EPA..			The Auditor has reviewed the reported environmental incidents and licence exceedances (WAD and PM10 dust) for the Audit Period. The review of the correspondence provided indicates that all exceedances were reported to DPE, DRE, EPA and where required to Council.	**COMPLIANCE**		
5(b)		For the purposes of this condition, environmental incident includes: (i) any incident causing or threatening material harm to theenvironment (ii) any breach of Conditions 1 to 9 and 11 to 24; (iii) any breach of environment protection legislation; or, (iv) a serious complaint from landholders or the public.					**Noted**		
5(c)		For the purposes of this condition, harm to the environment is material if: (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, where loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.					**Noted**		
6	Additional Environmental Reports	Additional environmental reports may be required from time to time as directed in writing by the Director-General and must be lodged as instructed.		J Thompson: no reports have been required by DRE over the Audit Period.		DRE did not request any reports over the Audit Period.	**Not Triggered**		
7	Rehabilitation	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	1. *Mining Operations Plan for the Hera Mine PA10_0191* , dated January 2017. 2. Letter from the DRE (to Hera (J Simpson), titled "*Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP", dated 27* February 2017.			The MOP (and therefore the Rehabilitation Management Plan has been reviewed and approved by DRE. Progressive rehabilitation has commenced on the mine site.	**COMPLIANCE**		
8		Not Used					Not Used		
9	Working Requirement	The lease holder must: (a) ensure that at least 52 competent people are efficiently employed in relation to the mining process or mining operations on the lease area OR (b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than $910,000.00 per annum whilst the lease is in force. The Minister may at any time or times, by instrument in writting served on the lease holder, increase or decrease the expenditure required or the number of people to be employed	1. Aurelia Metals Limited 2017 Annual Report 2. Aurelia Metals Limited 2018 Annual Report			The Annual (Board) Reports published by Aurelia Resources confirm that the annual expenditure at the mine is in excess of $910,000 per annum.	**COMPLIANCE**		
10(a)	Blasting	Ground Vibration The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises as the case may be, unless determined otherwise by the Department of Environment, Climate Change and Water.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017* ; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**		
10(b)		The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Environment, Climate Change and Water.	1. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2016 to 15 May 2017* ; dated 14 August 2017 2. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2017 to 15 May 2018* ; dated 16 August 2018 3. *Hera Mine Annual Review Project Approval 10_0191 Mining Lease 1686 Mining Lease 1746, For the Period 16 May 2019 to 15 May 2019;* dated 14 August 2019.			868 blasts were initiated during the 2016/7 reporting year. No vibration exceedances were detected at any privately owned properties. 868 blasts were initiated during the 2017/8 reporting year. No vibration exceedances were detected at any privately owned properties. 738 blasts were initiated during the 2018/9 reporting year. No vibration exceedances were detected at any privately owned properties.	**COMPLIANCE**		

11	Safety	Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Director-General, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be notified in writing to the Department and filled in or otherwise rendered safe to a standard acceptable to the Director-General.	1. Incident Register	1. Audit interview (J Thompson): no damage to private property or livestock has occurred as a result of the blasting undertaken.		No damage to private property or livestock has occurred as a result of the blasting undertaken.	COMPLIANCE		
12	Prevention of soil erosion and pollution	Prospecting operations must be carried out in a manner that does not cause or aggravate air pollution, water (including groundwater) pollution, soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan	1. *Aurelia - Hera Gold WMP Water Management Plan 2016* , prepared by GHD. 2. *Draft Water Management Plan 201* 8, Version 6, dated November 2019.		1. No areas of soil erosion were observed during the Audit.	A surface water management plan has been prepared and implemented at the Mine. There was no evidence of erosion problems observed by the auditor.	COMPLIANCE		
13	Transmission Lines (etc)	Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Director-General and subject to any conditions stipulated	1. incident Register	1.Interview J Thompson, 19 November 2019. No requests have been received requesting repairs be made to any public infrastructure.		No instances of damage to public infrastructure have been identified for the Audit Period.	Not Triggered		
14(a)	Roads and Tracks	The lease holder must pay to the relevant roads authority in control of the road or track the reasonable costs incurred by the roads authority in making good any damage to roads or tracks caused by operations carried out under this lease less any amount paid or payable from the Mine Subsidence Compensation Fund	1. Council accounts database extracts: 31/7/2015 - $10,000 14/06/2018 - $82,500 18/1/2018 - $22,000 13/10/2017 - $43,500	1. Interview L Richards. The road related payments made to Council consist of: $82,500 – Hera's contribution to the Hermidale-Nymagee sealing road project in 2018 $22,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2017/18 annual contribution) $43,500 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions) $10,000 – Maintenance grading of unsealed Hermidale-Nymagee Road (2015/16 & 2016/17 annual contributions once grading was completed)	1. The Nymagee - Hermidale Road is sealed for its entire length (the Auditor travelled to the site via the concentrate transport route.	Payments have been made to BSC during the audit period totalling $158,000 for road maintenance.	COMPLIANCE		
14(b)		During wet weather the use of any road or track must be restricted so as to prevent damage to the road or track.	1. *Aurelia - Hera Gold WMP Water Management Plan 2016* , prepared by GHD. 2. *Draft Water Management Plan 201* 8, Version 6, dated November 2019.	1.Interview L. Richards, 19 November 2019. Where required tracks around the site are closed during wet weather.		Drought conditions experienced over the Audit Period have resulted in no erosion issues being experienced.	COMPLIANCE		
14(c)		Existing access tracks should be used for all operations where reasonably practicable. New access tracks must be kept to a minimum and be positioned in order to minimise damage to the land, watercourses or vegetation					Noted		
14(d)		Temporary access tracks must be rehabilitated and revegetated to the satisfaction of the Director-General as soon as reasonably practicable after they are no longer required under this lease.	1. Mining Operations Plan for the Hera Mine PA10_0191, dated January 2017. 2. Letter from the DRE (to Hera (J Simpson), titled "Application for a Mining Operations Plan (MOP) for Mining Lease (ML) 1686, ML1746, Mining Act 1992, Hera Resources Pty Ltd of DPI approving the MOP", dated 27 February 2017.			The MOP (and therefore the Rehabilitation Management Plan has been reviewed and approved by DRE. Progressive rehabilitation has commenced on the mine site.	COMPLIANCE		
15(a)	Trees and Vegetation	The lease holder must not fell trees, strip bark or cut timber on any land subject of this lease without the consent of the landholder who is entitled to the use of the timber.		1.Interview L. Richards, 19 November 2019. No works have been required on any neighbours properties.		No works have been undertaken on neighbouring properties during the Audit Period.	Not Triggered		
15(b)		The lease holder must contact Forests NSW and obtain any required permit, licence or approval before taking timber from any Crown land within the lease area.		1. J Thompson: No timber has been taken from lease areas		No timber has been taken from lease areas.	Not Triggered		
16		Not Used					Not Used		
17(a)	Resource Recovery	Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any time the Director-General is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, notice in writing to the lease holder may be given requiring the holder to recover such minerals.	1. Notices from DPI relating to any aspect of the mining operations				Noted		
17(b)		The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery	1. Notices from DPI relating to any aspect of the mining operations				Noted		
17(c)		The lease holder must, when requested by the Director-General, provide such information as the Director-General may specify about the recovery of the mineral resources of the lease area		1. J thompson: DRE has not served any notices relating to the mining operations (requiring the provision of a report)		DRE has not served any notices on or required any reports from Hera over the Audit Period.	Not Triggered		
18	Indemnity	The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which ma. be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do	Noted				Noted		
19(a)	Security	This authorisation is subject to a condition that the holder of the authorisation is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the authorisation, including obligations of all or any kind under the authorisation that may arise in the future	Noted				Noted		
19(b)		The amount of the security deposit to be provided has been assessed by the Director General of the Department of Trade and Investment, Regional Infrastructure and Services at $2,470,000.00	1. Deed of Security Bond (Westpac) for the sum of $2,933,000 in favour of the Department of Industry, Skills, and Regional Development.			The required bond has been established.	COMPLIANCE		
19(c)		The security deposit is to be provided by way of a cash deposit (with no entitlement to any interest thereon) or in such other form as may be approved by the Director General (or their delegate).	1. Deed of Security Bond (Westpac) for the sum of $2,933,000 in favour of the Department of Industry, Skills, and Regional Development.			The required bond has been established.	COMPLIANCE		
20		Not Used					Not Used		
21		Not Used					Not Used		
22(a)	Prescribed Dam	Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the proposed tailings storage area without the prior written approval of the Minister and subject to any conditions stipulated			1. No evidence of mining outside of the lease area was observed by the Auditor.	All mining is being undertaken within the lease area.	COMPLIANCE		
22(b)		Where the lease holder desires to mine within the notification area he or she must: (i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and (ii) provide such information as the Minister may direct	1. Correspondence requesting approval to mine within the notification area.				Noted		
22(c)		The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with. This sub-paragraph is complied with if: (i) the Dams Safety Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b). (ii) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined. (iii) the Director-General has complied with any reasonable request made by the Dams Safety Committee or the owner of the dam for further information in connection with the mining proposal. (iv) the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and (v) where the Dams Safety Committee has made recommendations the approval is in terms that are in accordance with those recommendations; or where the Minister does not accept those recommendations or any of them - in accordance with a determination under subparagraph (ii) of this paragraph. (vi) Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978; or in the event of failure to reach such agreement - as determined by the Premier.	Noted				Noted		
22(d)		The Minister, on notice from the Dams Safety Committee, may at any time or times: (i) cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given. (ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed	Noted				Noted		
23	Suspension of Mining Operations	The holder of a mining lease may not suspend mining operations in the mining area other than in accordance with the consent of the Minister	Not Triggered				Noted		
24	Cooperation Agreement	The lease holder must make every reasonable attempt, and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts and • rehabilitation issues.				There are no overlapping mining titles related to this Project.	Not Triggered		

Mr Liam Richards
Environmental Advisor

"The Peak" 353 Burthong Road NYMAGEE,
NSW, 2831

24/04/2020

Dear Mr Richards

Hera Gold Mine (SSD 10_0191)
Independent Environmental Audit Report 25 September 2016 to 30 September 2019

I refer to the Independent Environmental Audit Report (Audit Report), for the reporting period from 25 September 2016 to 30 September 2019, for Hera Gold Mine (the development) submitted for the Secretary's consideration, as required under Schedule 5, Conditions 9 and 10 of the development consent SSD 10_0191, as modified (the consent).

The Department considers that the Audit Report, generally satisfied Condition 9 of the consent. Please note that approval of this Audit Report is not endorsement of the compliance status of the development.

The Department notes that you have made a request through the Department's Major Projects Portal for the Secretary's approval of updated Hazardous Materials Management Plan under Schedule 3, Condition 41 and the Waste Rock Management Plan under Schedule 3, Condition 43, however you have not lodged the Management Plans with the request. Consequently, the Department requests that you lodge these Management Plans through the Portal within three weeks from the date of this letter.

The Department also notes that the Audit Report recommended Traffic Management Plan under Schedule 3, Condition 38 be updated. Consequently, you are requested to review the Traffic Management Plan and if necessary, revise and submit for the Secretary's approval in accordance with Schedule 5, Condition 5 of the consent.

Lastly, the Department notes that you will submit the Final Hazards Analysis under Schedule 3, Condition 40, for the Secretary approval by 30 September 2020.

Should you need to discuss the above, please contact Georgia Dragicevic, Senior Compliance Officer, on (02) 4247 1852 or by email to Georgia.Dragicevic@planning.nsw.gov.au.

Yours sincerely



Katrina O'Reilly
Team Leader - Compliance
Compliance

As nominee of the Planning Secretary