Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: Hanking Gold Mining Pty Ltd

Licence: L4597/1988/14

Registered office: Level 26
140 St Georges Terrace
PERTH WA 6000

ACN: 161 566 490

Premises address: Mining Leases M77/7, M77/8, M77/10, M77/26, M77/31, M77/86, M77/112, M77/113, M77/114, M77/137, M77/138, M77/175, M77/193, M77/239, M77/347, M77/352, M77/380, M77/424, M77/431, M77/525, M77/554, M77/555, M77/631, M77/638, M77/640, M77/660, M77/668, M77/702, M77/745, M77/721, M77/746, M77/747, M77/790, M77/811, M77/969, M77/977, and M77/1036, Miscellaneous Licences L77/91, L77/112, L77/113, L77/114, L77/126, L77/128, L77/145, L77/162, L77/167, L77/173, L77/281, P77/3792, P77/3793 and General Purpose Leases G77/1-3
MARVEL LOCH WA 6426
as depicted in Schedule 1.

Issue date: Friday, 20 September 2013

Commencement date: Thursday, 26 September 2013

Expiry date: Sunday, 25 September 2022

Prescribed premises category
Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
05	Processing or beneficiation of metallic or non-metallic ore	50 000 tonnes or more per year	2 600 000 tonnes per annual period
06	Mine dewatering	50 000 tonnes or more per year	4 800 000 tonnes per annual period
64	Class II or III putrescible landfill	20 tonnes or more per year	2 000 tonnes per annual period

Conditions
This Licence is subject to the conditions set out in the attached pages.

Date signed: 28 April 2015
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Tim Gentle
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Contents

Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role
The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements
This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:
http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees
If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions
If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary
Hanking Gold Mining Pty Ltd purchased the former St Barbara Limited's Southern Cross Operations which include the Marvel Loch Mine, Yilgarn Star, Great Victoria Gold, Hercules and Southern Star, which are all linked to the Marvel Loch site through haul roads and pipeline infrastructure. Mining in the Marvel Loch area dates back to the early 1900s. The surrounding land uses including wheat and other cereal crops.

Hanking Gold Mining is a subsidiary of Hanking Industrial Group Co., Ltd. was established on August 8, 1992, focusing on the businesses of mining, metallurgy, commerce, electronics and precision manufacturing. It is the first publicly traded company on the Chinese stock market that was founded by a non-public sector organization in Fushun and one of the largest private companies in iron mining and processing in northeast China.

The mine site is 30 kilometres (km) south of the town of Southern Cross and 360 km east of Perth. Southern Cross has an annual average rainfall of 280 mm. Annual evaporation is estimated to be 2 635 mm per year. A 1 in 100-year storm event will generate approximately 166 mm of rainfall. The groundwater is hypersaline - TDS in the range of 40 000 mg/L to 160 000 mg/L with a depth greater than 10 m below the surface.

The Hanking mine at Marvel Loch has an open cut and underground mine, a processing plant, a tailings storage facility (TSF), landfill, and associated workshops and offices. The mine is dewatered to either the Jaccoletti pit or the Nevoria pit which itself can be dewatered to the Yilgarn Star pit.

Gold mineralisation at Marvel Loch extends across a 1.3 km strike length and has been identified to depths of more than 700 metres below surface level. The ore body comprises multiple lodes. The plant has been in operation for more than 15 years and has a production capacity of 2.4 million tonnes per annum based on a conventional carbon-in-leach circuit. Infrastructure is aging and has occasionally failed.

Emissions mainly relate to dewatering hypersaline water to mine pits and the risk from spills from the processing plant and pipelines. Discharge of tailings from the processing plant to the TSF, freeboard in the TSF and TSF integrity require management to minimise environmental risk. All have the potential to impact vegetation via direct contact, or rising groundwater levels, mounding of the water table and death of vegetation. A network of monitoring bores has been established to monitor impacts. Groundwater monitoring has indicated mounding around the TSF and seepage recovery is critical to ensure protection of native vegetation. Noise and dust may be an issue as the mine is adjacent to the town of Marvel Loch. The Premises abuts residential areas of the town site.

A maintenance and improvement schedule for the processing plant was developed in 2014 with planned crushing and milling commencing in late November 2014.

On 18 August 2015 the Department of Water issued an amended licence [GWL59227(8)] to take groundwater for the Marvel Loch operations. The water entitlement permitted under the provisions of this licence is 8,185,000 kL per annum.

The licence was amended in January 2016 following the submission of the compliance certificate for W5818/2015/1 authorising construction of a 3 kilometre long de-water pipeline and associated infrastructure from Axehandle deposit. Axehandle deposit is located approximately 11 km south of Southern Cross within the Marvel Loch operations. The mining operation at Axehandle is expected to occur for around 30 months.

This licence amendment is to include a new pipeline from the Glendower pit to the Triad open pit, 5km south of the Glendower pit.

The licences and works approvals issued for the Premises since 24/06/2010.

Instrument log		
Instrument	**Issued**	**Description**
W4732/2010/1	24/6/2010	Works Approval for TSF lift
L4597/1988/13	16/05/2013	Transfer of licence to Hanking Gold Mining Pty Ltd
W4732/2010/2	05/09/2013	Works Approval amendment to extend period of instrument relating to TSF lift
L4597/1988/14	19/09/2013	Licence reissue in REFIRE format
L4597/1988/14	26/03/2015	Licence amendment to remove requirement for settling ponds from the Licence, to include the construction of the Nevoria landfill and to remove monitoring related to the zone of influence.
W5818/2015/1	21/05/2015	Works Approval to construct dewatering infrastructure and 3 km pipeline from Axehandle deposit to Glendower pit.
L4597/1988/14	07/01/2016	Licence amendment to include the Axehandle dewatering operations, monitoring and reporting requirements plus discharge points within the premises boundary plus remove the improvement condition and Nevoria landfill compliance condition as these have been satisfactorily completed.
L4597/1988/14	28/04/2016	Licence amendment to include 5km pipeline from Glendower to Triad.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'AHD' means the Australian height datum;

'annual period' means the inclusive period from 1 October until 30 September in the following year;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

'AS/NZS 5667.4' means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made;*

'AS/NZS 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters;*

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters;*

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means;
Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 33
CLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: info@der.wa.gov.au;

'controlled waste' has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*;

'discharge facilities' means Glendower, Jaccoletti, Nevoria, Triad and Yilgarn Star pits;

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'hardstand' means a surface with a permeability of 10^{-9} metres/second or less;

'Licence' means this Licence numbered L4597/1988/14 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'normal operating conditions' means any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'quarterly' means the 4 inclusive periods from 1 October to 31 December and in the following year, 1 January to 31 March, 1 April to 30 June and from 1 July to 30 September;

'rehabilitation' means the completion of the engineering of a landfill cell and includes capping and/or final cover;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'shut-down' means the period when plant or equipment is brought from normal operating conditions to inactivity;

'six monthly' means the 2 inclusive periods from 1 October to 31 March in the following year and then from 1 April to 30 September;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'structural integrity assessment' means conducting an inspection of the TSF, evaporation ponds and similar impoundments to ensure their structural integrity meets the requirements of the Western Australian Department of Mines and Petroleum and the ANCOLD 2003 Dam Safety Management Guidelines;

'SWL' means standing water level;

'**TSF'** means engineered containment pond or dam used to store tailings; and

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 Premises operation

1.2.1 The Licensee shall ensure that all pipelines containing saline water, tails, or process water are either:

(a) equipped with telemetry systems and pressure sensors along pipeline routes to allow the detection of leaks and failures;
(b) equipped with automatic cut-outs in the event of a pipe failure; or

(c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

1.2.2 The Licensee shall ensure that tailings, decant water and effluent are only discharged into containment cells, dams or ponds, which are provided with the infrastructure detailed in Table 1.2.1.

Table 1.2.1 Containment infrastructure

Containment cell or dam number(s)	Material	Infrastructure requirements
TSF 1 and 2	Tailings	Lined with in-situ clay to limit seepage to groundwater
Decant Water Ponds 3 and 4	Decant Water	Lined with 1mm HDPE to achieve a permeability of at least $<10^{-9}$ m/s or equivalent
Glendower, Jaccoletti, Nevoria, Triad and Yilgarn Star pits.	Mine dewater	Bedrock
Bioremediation pad	Hydrocarbon contaminated waste	Ensure soil is bioremediated by: • maintaining a suitable soil thickness; • maintaining an appropriate moisture content and nutrient level within the soil which sustains biological activity; and • at least quarterly soil aeration.

1.2.3 The Licensee shall:

(a) undertake inspections as detailed in Table 1.2.2;

(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and

(c) maintain a record of all inspections undertaken.

Table 1.2.2: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection*
Tailings pipelines	Visual condition and leak assessment	Daily
Return water lines		
Fuel storage areas, ore treatment plant and workshop	Visual condition, leak assessment and spills	Daily
Borefields and pump stations	Visual integrity	Daily
Mine De-water pipelines	Visual condition and leak assessment	Daily
Discharge facilities	Visual condition and leak assessment	Daily
TSF Embankment freeboard	Visual to confirm required freeboard is available	Daily and after a rain event
Native vegetation health around infrastructure	Visual health assessment	Weekly
TSF Embankment	Structural integrity assessment	Annual

*when in care and maintenance inspections can be monthly.

1.2.4 The Licensee shall maintain a minimum 300mm embankment freeboard on the settling ponds or storage facilities or ensure that the facility is designed to hold any inflow received as a result of a 1:100 year, 72-hour duration storm event, for at least 72 hours.

1.2.5 The Licensee shall install and maintain protective bunding, skimmers, silt traps, neutralisation pits, fuel and oil traps, drains and /or sealed collection sumps around the

process plant, maintenance workshops and laboratory to enable recovery of spillages and protection of surrounding soils and groundwater.

1.2.6 The Licensee shall ensure that collected material from the sumps detailed in condition 1.2.5 are disposed off site in accordance with the Environmental Protection (Controlled Waste) Regulations 2004.

1.2.7 The Licensee shall manage TSF's such that:

(a) a minimum top of embankment freeboard of 300 mm is maintained across the full surface of the TSF;
(b) a seepage collection and recovery system is provided and used to capture seepage from the TSF; and
(c) seepage is returned to the TSF or the process.

1.2.8 The Licensee shall ensure depth to groundwater on the premises within the zone of influence of any water or discharge containment structure is greater than the levels specified in Table 1.2.3.

Table 1.2.3: Groundwater level controls

Parameter	Limit (mbgl)	Averaging Period
Standing Water Level	4.0	Spot Sample

1.2.9 The Licensee shall, upon becoming aware that depth to groundwater levels in monitoring bores around the TSF are less than 6.0mbgl, within six months, design and implement a Groundwater Recovery Plan.

1.2.10 The Licensee shall ensure that the Groundwater Recovery Plan includes but is not limited to:

(i) Notification to the CEO of when and in how many bores the groundwater level could not be met;
(ii) Any environmental impacts observed;
(iii) Strategies to achieve the groundwater level, including:
(iv) Any additional recovery bores or trenches required;
(v) Maximising performance of existing recovery bores;
(vi) Frequency of groundwater level monitoring;
(vii) Minimising the normal operating supernatant pool area on the TSF;
(viii) Frequency and scope of groundwater quality monitoring;
(ix) Predicted increases in groundwater recovery;
(x) Predicted timeframes to achieve the groundwater level;
(xi) Strategies to ensure the level will be met in the future; and
(xii) Establishing and implementing appropriate vegetation monitoring.

1.2.11 The Licensee shall undertake an annual water balance for the TSF. The water balance shall as a minimum consider the following:

(a) site rainfall;
(b) evaporation;
(c) decant water recovery volumes;
(d) seepage recovery volumes; and
(e) volumes of tailings deposited.

1.2.12 The Licensee shall collect waste lubricants, hydraulic fluids and spent radiator coolant/inhibitors in holding tanks in bunded areas for subsequent disposal off-site or recycling.

1.2.13 The Licensee shall ensure that vehicle wash down areas are equipped with fuel/oil traps and provisions to ensure detergent, fuel and solvent containing waters are contained and disposed of via an oil separator and a licensed Controlled Waste Carrier.

1.2.14 The Licensee shall only accept waste on to the Landfill for burial if:
(a) it is of a type listed in Table 1.2.4;
(b) the quantity accepted is below any quantity limit listed in Table 1.2.4; and
(c) it meets any specification listed in Table 1.2.4.

Table 1.2.4. Waste acceptance

Waste type	Quantity limit tonnes/ annual period	Specification[1]
Clean fill	2 000 tonnes for all waste types	None Specified
Putrescible Waste		None Specified
Inert Waste Type 1		None Specified
Inert Waste Type 2		Tyres and plastic only

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the Environmental Protection (Controlled Waste) Regulations 2004.

1.2.15 The Licensee shall ensure waste that does not comply with condition 1.2.2 is removed from the Premises to an appropriately authorised facility as soon as practicable.

1.2.16 The Licensee shall ensure that wastes accepted onto the Premises are only subjected to the processes set out in Table 1.2.5 and in accordance with any process limits described in that Table.

Table 1.2.5: Waste processing

Waste type	Process(es)	Process limits[1]
All Waste	Handling and disposal of waste by land filling	(i) Disposal of waste by land filling shall only take place within the Marvel Loch mine landfill shown on the Premises Map in Schedule 1; (ii) The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2m; (iii) waste is disposed of in a defined trench or within an area enclosed by earthen bunds; (iv) the tipping area is restricted to a maximum linear length of 30 metres; (v) the tipping area is no greater than 2 metres in height; and (vi) there is a fire break of at least 3 metres around the boundary of the site.
Inert Waste Type 1		None specified
Inert Waste Type 2		To be stored in piles of up to 100 units with a 6m separation distance between piles. Tyres shall only be landfilled: (i) in a designated disposal area in the landfill; (ii) in batches separated from each other by at least 100mm of soil and each consisting of not more than 40 cubic metres of tyres reduced to pieces; or (iii) in batches separated from each other by at least 100mm of soil and each consisting of not more than 1000 whole tyres.
Putrescible Waste		None specified
Clean Fill		None specified
Depth to ground water	Construction of new cell	Depth to groundwater must be at least two metres from the base of the landfill

Note 1: Requirements for land filling tyres are set out in Part 6 of the Environmental Protection Regulations1987.

1.2.17 The Licensee shall manage the land filling activities to ensure:
(a) waste is levelled and compacted as soon as practicable after it is discharged;
(b) waste is placed and compacted to ensure all faces are stable and capable of retaining restoration material;
(c) rehabilitation of a cell or phase takes place within 6 months after disposal in that cell or phase has been completed.

1.2.18 The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.2.6 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.2.6: Cover requirements[1]

Waste Type	Material	Depth	Timescales
Inert Waste Type 1	No cover required		
Inert Waste Type 2	Type 1 Inert waste, clean fill or soil Clean fill, subsoil	100mm Final cover must be > 500 mm	By the end of the working week in which the waste was deposited. Plastic waste with the potential to become windblown shall be covered as soon as practicable after deposit.
All other wastes		150mm	Continuous cover techniques, or a minimum of weekly

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of the Environmental Protection Regulations 1987.

1.2.19 The Licensee shall:
(a) Implement security measures at the site to prevent unauthorised access to the site;
(b) Undertake regular inspections of all security measures and repair damage; and
(c) Ensure the gates are closed and locked when the site is closed.

1.2.20 The Licensee shall ensure that windblown waste is collected at least on a weekly basis and returned to the active tipping area.

1.2.21 The Licensee shall not burn or allow the burning of any waste on the landfill.

1.2.22 The Licensee shall ensure that any unauthorised fire on site is extinguished as soon as possible.

1.2.23 The Licensee shall ensure that there are adequate water supplies and procedures in place at the premises so than any unauthorised fire is promptly extinguished.

2 Monitoring

2.1 General monitoring

2.1.1 The licensee shall ensure that:
(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11
(c) all samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured unless indicated otherwise in relevant table.

2.1.2 The Licensee shall ensure that :
(a) monthly monitoring is undertaken at least 15 days apart;
(b) quarterly monitoring is undertaken at least 45 days apart;
(c) six monthly monitoring is undertaken at least 5 months apart; and
(d) annual monitoring is undertaken at least 9 months apart.

2.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

2.1.4 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

2.2 Monitoring of point source emissions to groundwater

2.2.1 The Licensee shall undertake the monitoring in Table 2.2.1 according to the specifications in that table.

Table 2.2.1: Monitoring of point source emissions to groundwater

Emission point reference	Parameter	Units	Frequency
Mine dewatering discharge points G, J, N, T & Y.	Volumetric flow rate	L/s	monthly
	S; As; Cr; Co; Zn; Cu; Na; Cl; Al; Fe; Mg; Ca; K; Mn; Ni; Se; SO_4^{2-} and HCO_3^-.	mg/L	Annually
	TSS (Total suspended solids) and TDS (Total dissolved solids)	mg/L	Six monthly
	pH	N/A	Six monthly

2.3 Process monitoring

2.3.1 The Licensee shall undertake the monitoring specified in Table 2.3.1 according to the specifications of the table.

Table 2.3.1: Process monitoring

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
-	-	Volumes of tailings deposited into the TSF	m^3	Continuous	None specified
-	-	Volumes of water recovered from the TSF	m^3	Continuous	None specified
-	-	Phreatic surface levels within TSF embankments	mAHD	Monthly	None specified
-	-	Volumes of seepage recovered	m^3	Continuous	None specified
-	-	Volumes of ore processed	m^3	Annual period	None specified
Polaris South pit	Mine dewatering	Cumulative volumes of mine dewater	m^3	Monthly	None specified
Landfill	Putrescible landfill site	Volumes of waste disposed	tonnes	Monthly	None specified

2.4 Ambient environmental quality monitoring

2.4.1 The Licensee shall undertake the monitoring in Table 2.4.1 according to the specifications in that table.

Table 2.4.1: Monitoring of ambient water quality

Monitoring point reference	Parameter	Limit	Units	Averaging period	Frequency
MB 94 D1 MB 94 G1	Standing water level	Greater than 4m	mbgl	Spot sample	Quarterly
MB 94 F1 MB 94 E1	Standing water level	-			
MB 94 D1 MB 94 F1 MB 94 G1 MB 94 E1	pH*		N/A	Spot sample	Quarterly
	Total Dissolved Solids (TDS); and Weak Acid Dissociable Cyanide		mg/L		Quarterly
	TSS; Cu; Na; Cl; Al; Cd; Fe; Mg; Ca; K; Mn; Ni; Se; As; Zn; Cr; Co; SO_4^{2-} and HCO_3^-		mg/L		Six monthly
MB 94 B1	Standing water level[1]	Greater than 4m	mbgl	Spot sample	Quarterly
	pH*	Greater than 6 but less than 9		Spot sample	Quarterly
	Weak Acid Dissociable Cyanide	Less than 0.5	mg/L	Spot sample	Quarterly
PZ 99 B1; PZ 99 D1; PZ 99 E1; PZ 99 F1; PZ 99 G1; TSF 1; TSF 2; TSF 3; TSF 4; TSF 5; TSF 6; TSF 7; TSF 8; TSF 9.	Standing water level	Greater than 4m	mbgl	Spot sample	Monthly

* These parameters should be measured and recorded in the field to ensure representativeness. Field samples are to be reported as per condition 5.2.1 An exemption from NATA laboratory analysis is allowed given geographical remoteness of the sample site and short holding time of the parameter.
Note1:SWL shall be determined prior to collection of all other water samples.

3 Information

3.1 Records

3.1.1 All information and records required by the Licence shall:
(a) be legible;
(b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;

(c) except for records listed in 3.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
(d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  (i) off-site environmental effects; or
  (ii) matters which affect the condition of the land or waters.

3.1.2 The Licensee shall ensure that:
(a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
(b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

3.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

3.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

3.2 Reporting

3.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 28 calendar days after the end of the annual period. The report shall contain the information listed in Table 3.2.1 in the format or form specified in that table.

Table 3.2.1: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form[1]
-	Summary of any failure or malfunction of any pollution control equipment or any incidents that have occurred during the year and any action taken	None specified
3.1.3	Compliance	Annual Audit Compliance Report (AACR)
3.1.4	Complaints summary	None specified
Table 1.2.2	Embankment structural integrity assessment	None specified
1.2.11	TSF water balance	None specified
Table 2.2.1	Monitoring of point source emissions to groundwater	AR1
-	Monitoring of inputs and outputs	None specified
Table 2.3.1	Process Monitoring	None specified
Table 2.4.1	Monitoring of ambient water quality	None specified

Note 1: Forms are in Schedule 2

3.2.2 The Licensee shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and Licence limits.

3.3 Notification

3.3.1 The Licensee shall ensure that the parameters listed in Table 3.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 3.3.1: Notification requirements

Condition or table	Parameter	Notification requirement[1]	Format or form[2]
2.1.4	Calibration report	As soon as practicable.	None specified
Table 1.2.3, table 1.2.4 and table 2.4.1	Limit exceedances	Within 24 hours of becoming aware of exceedance	EL1
1.2.4	Groundwater operating strategy	30 calendar days	None specified
1.2.22	Unauthorised fire at landfill	Within 14 calendar days	None specified
1.2.8 & 2.4.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable.	N1
-	Any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution		

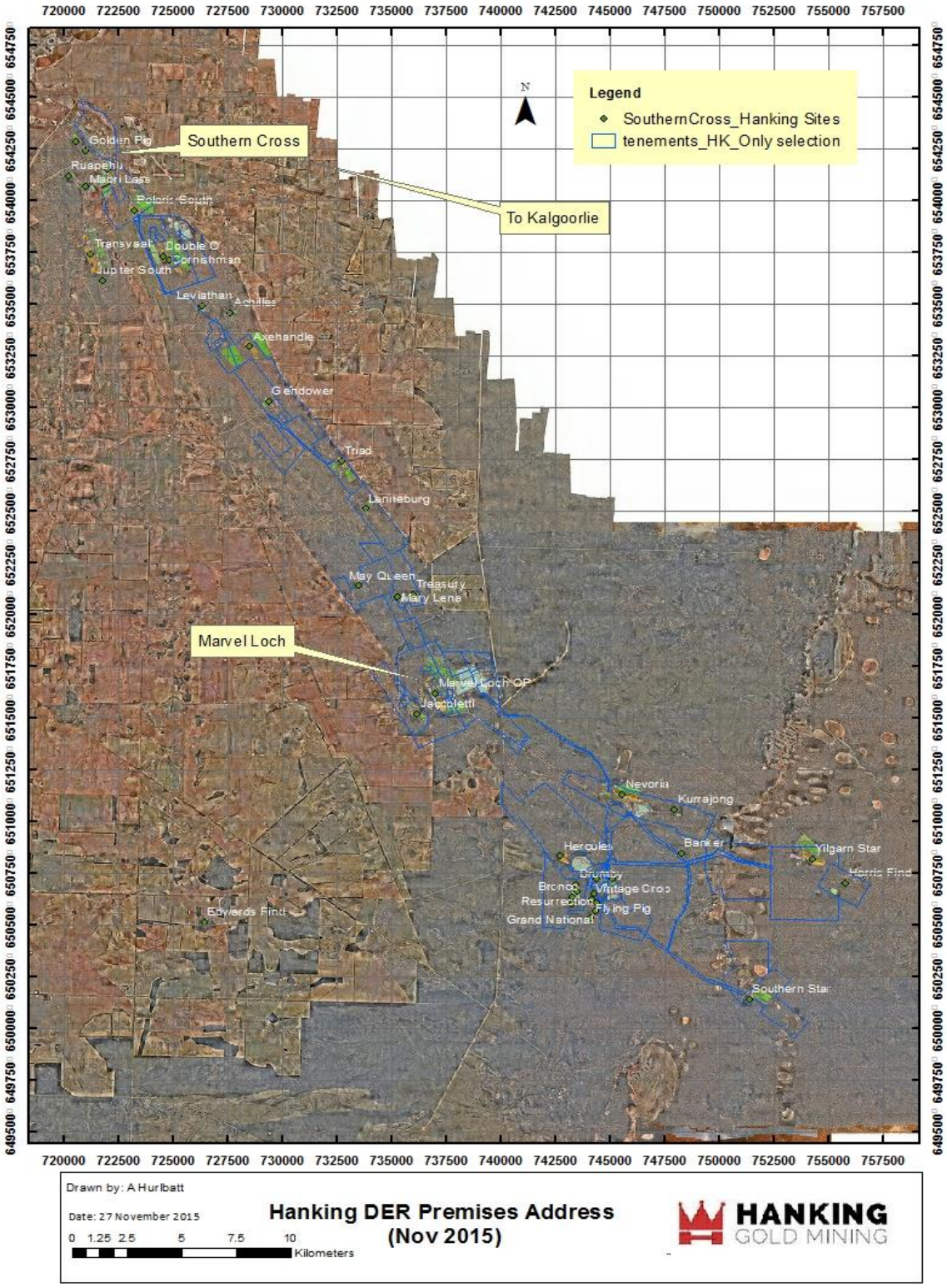
Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

Schedule 1: Maps

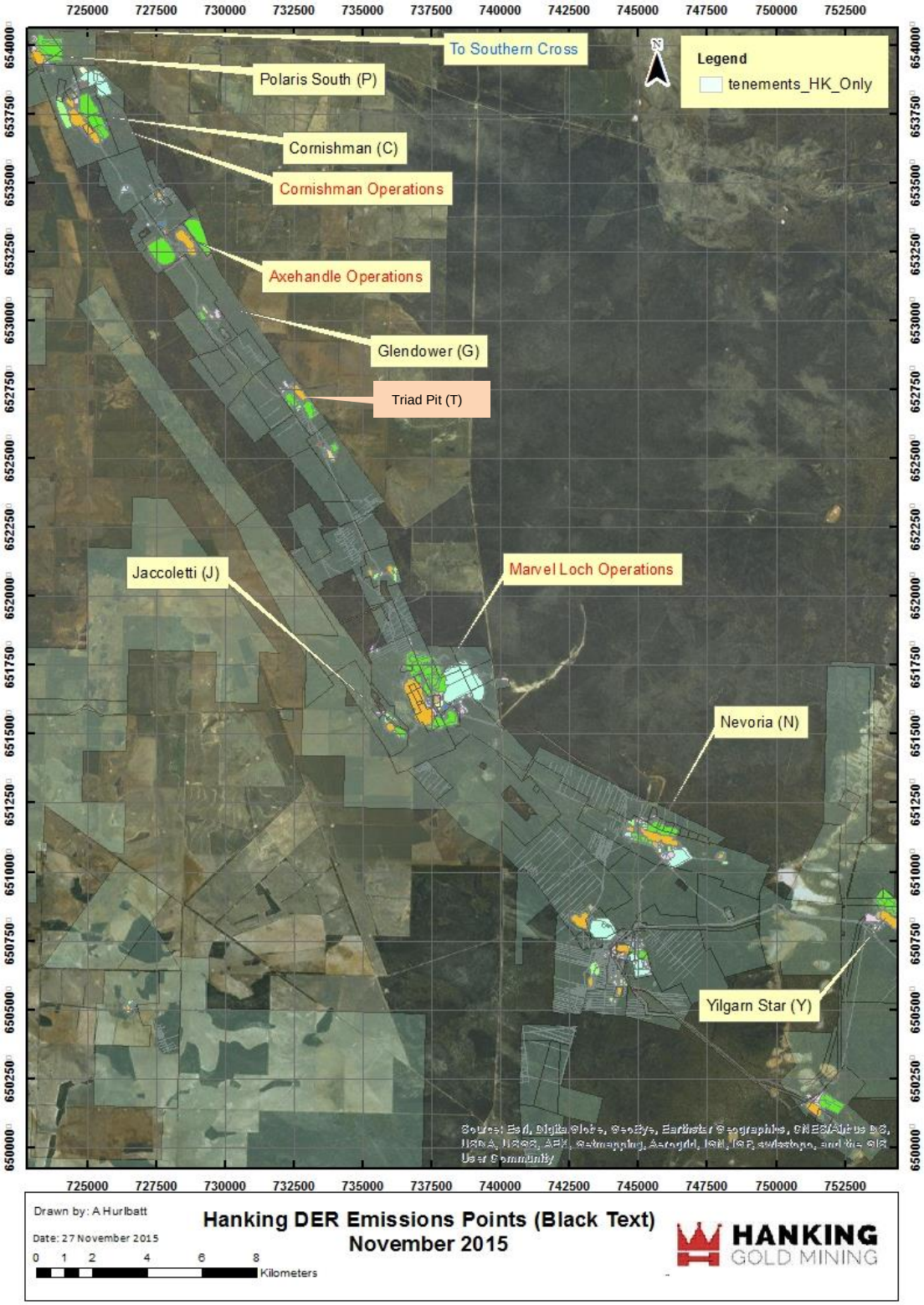
Premises map

The Premises is shown in the maps below. The blue line depicts the Premises boundary



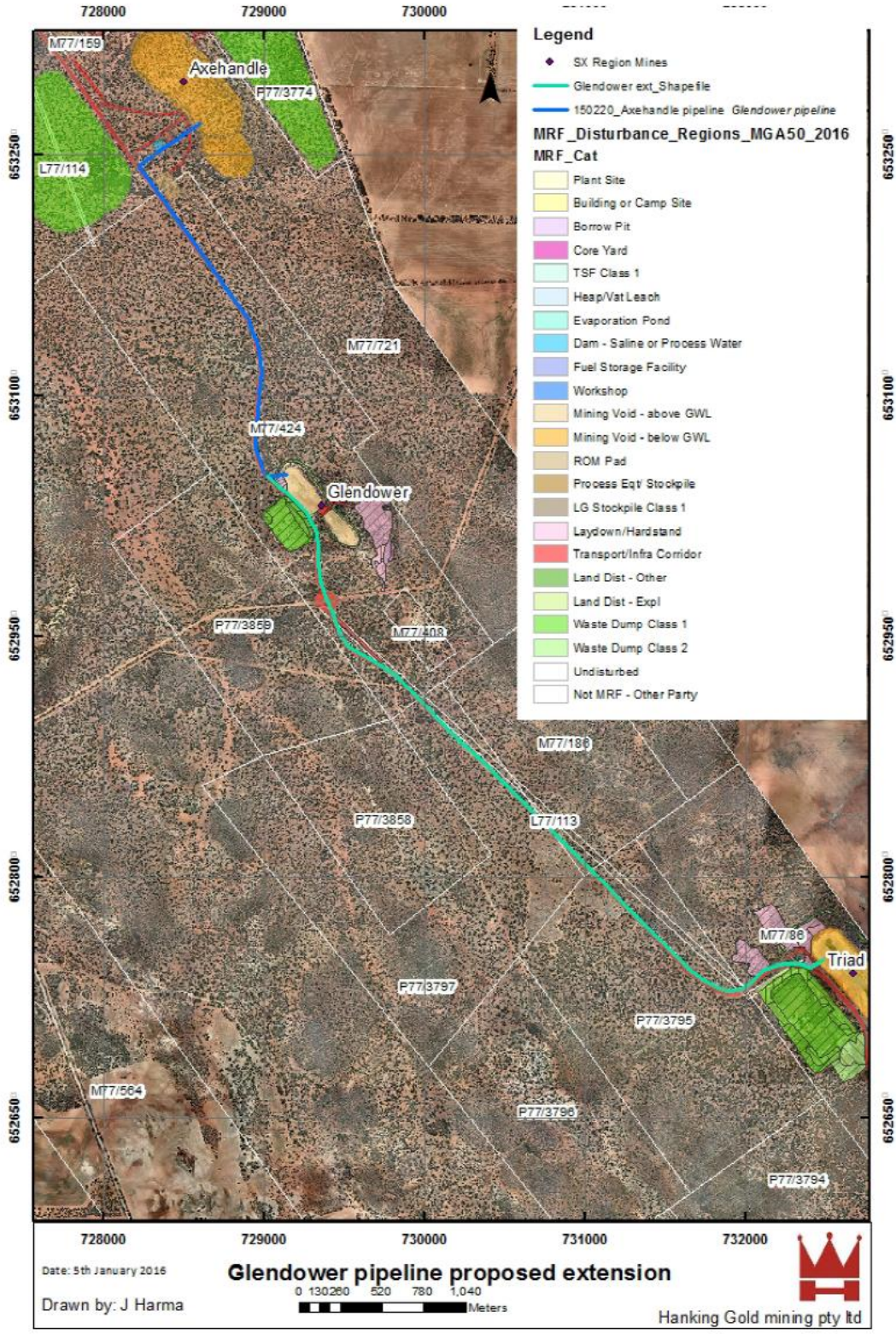
Map of emission points

The locations of the emission points defined in Table 2.2.1 are shown below.



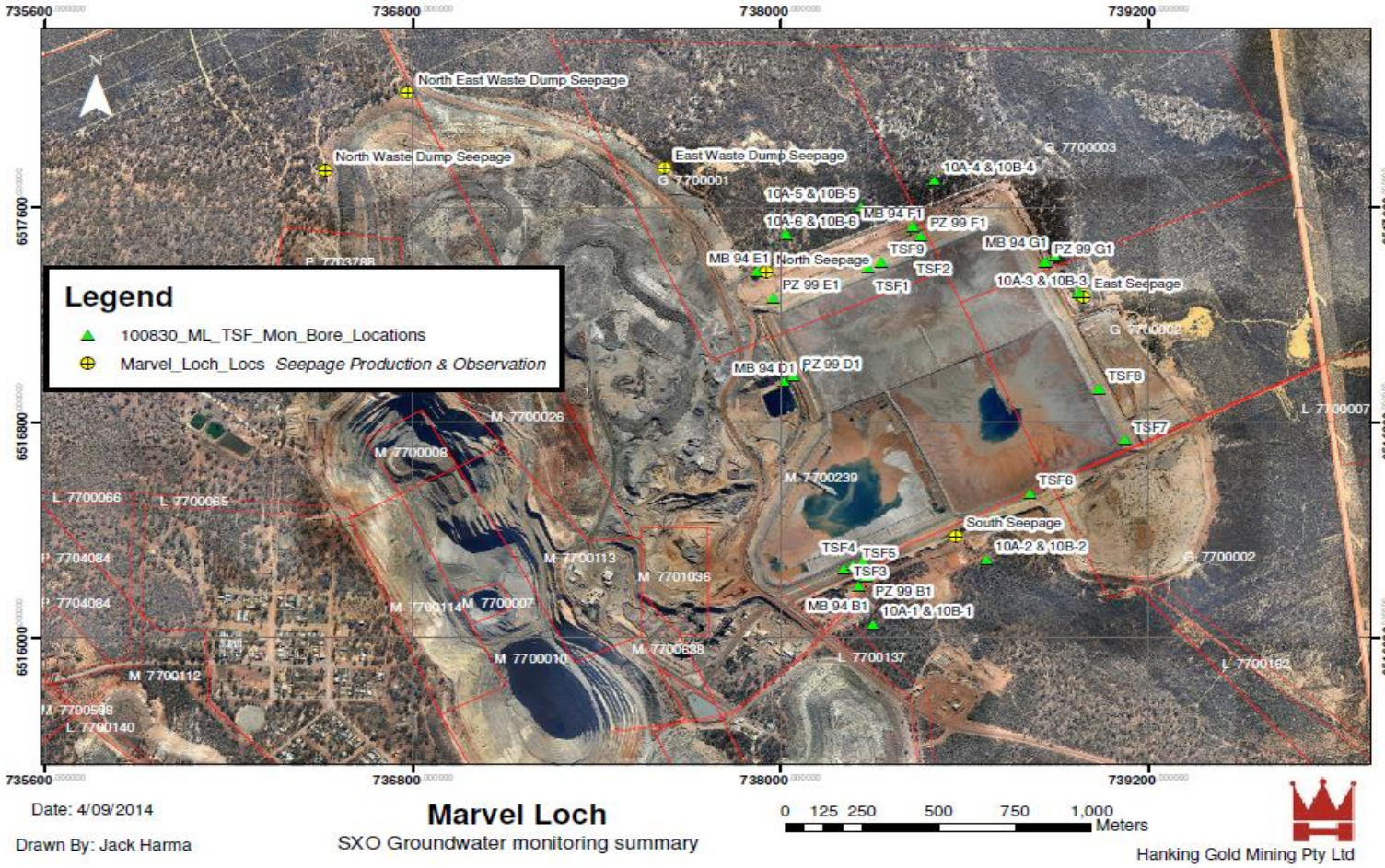
Map of pipeline location

The location of the dewater pipeline described in condition 1.2.2 is shown below.



Map of monitoring locations

The locations of the monitoring points defined in Tables 2.4.1 are shown below.



Map of landfill locations

The location of the Nevoria landfill is shown below.

Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A

LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:

SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:
b) Date(s) when the non compliance occurred, if applicable:
c) Was this non compliance reported to DER?:
☐ Yes ☐ Reported to DER verbally Date _____ ☐ Reported to DER in writing Date _____ ☐ No
d) Has DER taken, or finalised any action in relation to the non compliance?:
e) Summary of particulars of the non compliance, and what was the environmental impact:
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):
g) Cause of non compliance:
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:
i) Action taken or that will be taken to prevent recurrence of the non compliance:

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:

SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	□	by the individual licence holder, or
	□	by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	□	by affixing the common seal of the licensee in accordance with the *Corporations Act 2001*; or
	□	by two directors of the licensee; or
	□	by a director and a company secretary of the licensee, or
	□	if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	□	by the chief executive officer of the licensee; or
	□	by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

Licence: L4597/1988/14
Form: GR1
Name: Monitoring of point source emissions to groundwater

Licensee: Hanking Gold Mining Pty Ltd
Period :

Form GR1: Monitoring of point source emissions to groundwater						
Emission point	**Parameter**	**Limit**	**Result**[1]	**Averaging period**	**Method**	**Sample date & times**

Note 1: All units are referenced to STP dry

Signed on behalf of Hanking Gold Mining Pty Ltd: …….. Date: ……..

Licence: L4597/1988/14 Licensee: Hanking Gold Mining Pty Ltd
Form: EL1 Date of exceedance:
Name: Limit exceedance under exemption where relevant management action taken

Form EL1: Limit exceedance under exemption where relevant management action taken									
Emission point	**Exemption event reference**	**Date & time**	**Parameter**	**Peak emission[1]**	**Peak emission[1]**	**Average emission[1]**	**Average emission[1]**	**Duration of exceedance**	**Date & time process restarted (if stopped)**

Please provide details of the exceedance, including but not limited to:
(a) the emission point
(b) the root cause analysis for the exceedances;
(c) any common or contributory factors including but not limited to fuel, mass emissions, gas flow rates, inlet & exit temperature, abatement status;
(d) a description of remedial measures taken or planned to be taken, including those taken to prevent recurrence of the exceedances;
(e) complaints received that may have been caused by this exceedance; and
(f) for those exceedances that may have caused complaints, meteorological details: temperature, wind speed and wind direction, humidity.

Note 1: All units are referenced to STP dry

Signed on behalf of Hanking Gold Mining Pty Ltd : …….. Date: …….

Licence: L4597/1988/14 Licensee: Hanking Gold Mining Pty Ltd
Form: N1 Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution	
Date and time of event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken , or intended to be taken, to stop any emission	
Description of the failure or accident	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Hanking Gold Mining Pty Ltd	
Date	

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Hanking Gold Mining Pty Ltd

Licence: L4597/1988/14

Registered office: Level 26
140 St Georges Terrace
PERTH WA 6000

ACN: 161 566 490

Premises address: Mining Leases M77/7, M77/8, M77/10, M77/26, M77/31, M77/86, M77/112, M77/113, M77/114, M77/137, M77/138, M77/175, M77/193, M77/239, M77/347, M77/352, M77/380, M77/424, M77/431, M77/525, M77/554, M77/555, M77/631, M77/638, M77/640, M77/660, M77/668, M77/702, M77/721, M77/745, M77/746, M77/747, M77/790, M77/811, M77/969, M77/977, and M77/1036, Miscellaneous Licences L77/91, L77/112, L77/113, L77/114, L77/126, L77/128, L77/145, L77/162, L77/167, L77/173, L77/281, P77/3792, P77/3793 and General Purpose Leases G77/1-3
MARVEL LOCH WA 6426
as depicted in Schedule 1.

Issue date: Friday, 20 September 2013

Commencement date: Thursday, 26 September 2013

Expiry date: Sunday, 25 September 2022

Amendment Date: Thursday, 28 April 2016

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Jamie Piotrowski
Licensing Officer

Decision Document authorised by: Tim Gentle
Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	05	2 600 000 tonnes per year
	06	4 800 000 kL per year
	64	2 000 tonnes per year
Application verified Application fee paid	Date: N/A Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes ☐ No☐ N/A☒ Yes ☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes☒ No☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste	Yes☐ No☒	

into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Department of Water consulted Yes ☒ No ☐
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.	
Is the Premises subject to any EPP requirements? Yes☐ No☒	

3 Executive summary of proposal and assessment

Hanking Gold Mining Pty Ltd (Hanking) currently has mining and exploration tenements covering approximately 950 km^2 in the Southern Cross region of Western Australia. These include the Marvel Loch Mine, Yilgarn Star, Great Victoria Gold, Hercules and Southern Star, which are all linked to the Marvel Loch site through haul roads and pipeline infrastructure. Mining in the Marvel Loch area dates back to the early 1900s. The surrounding land uses including wheat and other cereal crops.

The Hanking mine at Marvel Loch has an open cut and underground mine, a processing plant, a tailings storage facility (TSF), landfill, and associated workshops and offices. The mine is dewatered to either the Jaccoletti pit or the Nevoria pit which itself can be dewatered to the Yilgarn Star pit.

Gold mineralisation at Marvel Loch extends across a 1.3 km strike length and has been identified to depths of more than 700 metres below surface level. The ore body comprises multiple lodes. The plant has been in operation for more than 15 years and has a production capacity of 2.4 million tonnes per annum based on a conventional carbon-in-leach circuit.

Emissions mainly relate to dewatering hypersaline water to mine pits and the risk from spills from the processing plant and pipelines. Discharge of tailings from the processing plant to the TSF, freeboard in the TSF and TSF integrity require management to minimise environmental risk. All have the potential to impact vegetation via direct contact, or rising groundwater levels, mounding of the water table and death of vegetation. A network of monitoring bores has been established to monitor impacts. Groundwater monitoring has indicated mounding around the TSF and seepage recovery is critical to ensure protection of native vegetation. Noise and dust may be an issue as the mine is adjacent to the town of Marvel Loch. The Premises abuts residential areas of the town site.

On 18 August 2015 the Department of Water issued an amended licence [GWL59227(8)] to take groundwater for the Marvel Loch operations. The water entitlement permitted under the provisions of that licence is 8 185 000 kL per annum.

The licence was amended in January 2016 following the submission of the compliance certificate for W5818/2015/1 authorising construction of a 3 kilometre long de-water pipeline and associated infrastructure from Axehandle deposit. Axehandle deposit is located approximately 11 km south of Southern Cross within the Marvel Loch operations. The mining operation at Axehandle is expected to occur for around 30 months.

This Licence amendment is sought by the Licensee to include the Triad Pit as an approved disposal point for mining dewater.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, DEC's Policy Statement - Limits and targets for prescribed premises (2006), and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Premises operation	L1.2.2 & table 1.2.1	**Operation** Emission Description *Emission:* Hypersaline mine dewatering discharge from pipeline failure. *Impact:* Hypersaline water may impact localised vegetation. *Controls:* The pipeline will be situated within roadside drains that contain catchment sumps. In the event of a pipeline failure, the drains will be able to hold the spilt hypersaline water within the sumps where it will be recovered. A telemetry system with automatic cut-off sensors will be installed as part of the pipeline, minimising any spillage. Risk Assessment *Consequence:* Minor *Likelihood:* Rare *Risk Rating:* Low Regulatory Controls Condition L1.2.2 and table 1.2.1 has been amended to permit discharge of water from Axehandle into Triad pit. No construction is required for the pipeline extension as the company will be utilising existing roadside drains. No additional licence conditions are required as the pipeline is a duplication of existing infrastructure and existing conditions capture the operation of the pipeline to ensure minimal impact to the environment. Residual Risk *Consequence:* Minor *Likelihood:* Rare	N/A

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Risk Rating: Low	
Point source emissions to groundwater including monitoring	L2.2.1 Table 2.2.1	**Operation** The Triad Pit is located 5km to the south of the Glendower Pit. Both sites are ex-mining voids and are similar in geological structure and groundwater salinity (Hypersaline).	*Axehandle Pipeline EPA Licence Amendment Supporting Documents (Glendower – Triad Extension)*, Hanking Gold Mining Pty Ltd February 2016
Licence Duration	N/A	The Licence duration including the Axehandle dewatering project will be amended to Sunday, 25 September 2022, in line with DER policy to align expiry dates with Mining Tenement expiry.	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
22/4/2016	Proponent sent a copy of draft amended instrument	No comments	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High