



Application for Licence Amendment

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L5029/1992/11
Licence Holder	Northern Star (Kanowna) Pty Limited
ACN	010 511 789
File Number	DER2015/002027-6
Premises	<p>Kanowna Belle Gold Mine</p> <p>Mining Tenements M27/18, M27/22, M27/23, M27/37, M27/49, M27/57, M27/92, M27/103, M27/122, M27/123, M27/127, M27/159, M27/164, M27/232, M27/245, M27/287, M27/420, L27/62, L27/83 and L27/87</p> <p>KANOWNA WA 6431</p>
Date of Report	27 February 2020
Status of Report	Final

1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Report	refers to this document.
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	Director General of the Department administering the <i>Environmental Protection Act 1986</i>
Controlled Waste Regulations	<i>Environmental Protection (Controlled Waste) Regulations 2004 (WA)</i>
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPP	means the <i>Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003</i>
Existing Licence	the Licence (L5029/1992/11) issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this assessment.
Licence Holder	Northern Star (Kanowna) Pty Ltd
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Waste	has the same meaning given to that term under the EP Act

2. Amendment details

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend licence L5029/1992/11 issued under the EP Act to Northern Star (Kanowna) Pty Ltd for the Kanowna Belle Gold Mine.

Details of the amendment are set out in the form of an amended licence.

The licence holder submitted an application to amend licence L5029/1992/11 on 29 November 2019. The application sought the amendment of the licence to authorise offsite disposal of unstabilised arsenic trioxide waste to a Class V landfill.

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
Application form Licence amendment application form and supporting documentation (DWERDT229311)	29 November 2019

The guidance statements and documents that have informed the assessment and decision outlined in the amendment report are listed in Appendix 1.

2.1 Purpose and scope of assessment

An application was received from the licence holder on 29 November 2019 to amend the existing licence to specify an additional method for the disposal of arsenic trioxide waste to allow the waste to be disposed to an offsite Class V landfill.

Arsenic trioxide waste in the form of a dry powder/particulate is listed as a Class 6.1 toxic substance. Arsenic trioxide waste is currently encapsulated and solidified on the premises via the dolocrete encapsulation process to make the waste inert and safe for disposal. The existing licence authorises underground disposal of the solidified arsenic trioxide waste to the Kanowna Bell underground mine in accordance with the conditions of the licence.

The licence holder is seeking approval to transport arsenic trioxide waste from KB to the Sandy Ridge near-surface geological waste repository for disposal. The repository is located approximately 240 km by road north-west of Kalgoorlie-Boulder and is currently being developed by Tellus Holdings Limited to accept Class IV and Class V waste. The arsenic trioxide waste will be contained within sealed and vacuum cleaned United Nations approved bags (bulka bags), loaded into fully sealed 20ft shipping containers, for transport to Sandy Ridge.

The assessment of this amendment application has been undertaken in accordance with DWER's published Regulatory Framework. This amendment report only considers the proposed change to waste disposal outlined above. Existing operations on the premises have been previously subject to risk assessment through the premises licence assessment and therefore are not considered in this assessment.

2.2 CEO initiated amendment

In conjunction with the licence holder's amendment application, the CEO has initiated the following amendments to the existing licence:

1. inclusion of Table 4.3.1 – Notification requirements, Section 5 – EPP related requirements, and Section 6 – Works which were removed from the existing licence in error during the last licence amendment; and
2. extension of the licence duration to 7 October 2025 due to the licence holder seeking renewal of tenement M27/245 (within the premises) which had been due to expire on 20 June 2020.

2.3 Basis for CEO Amendments

1. Table 4.3.1 – Notification requirements, Section 5 – EPP related requirements, and Section 6 – Works have been included in the amended licence as these conditions were deleted in error when the licence (L5029/1992/11) was amended on 27 June 2019.
2. The licence holder confirmed, in an email sent 16 January 2020, that they intend to apply for a 21 year extension for mining lease M27/245 and that the application will be lodged with Department of Mines, Industry Regulation and Safety prior to the expiry date.

The extension of the licence expiry date does not include any alteration to the production, design capacity or prescribed activity and therefore does not require a risk assessment in accordance with DWER's Guidance Statement: Risk Assessments.

The Delegated Officer has therefore determine to extend the licence duration from 7 April 2020 to 6 April 2025 in accordance DWER's Guidance Statement: Licence Duration.

3. Premises information

The licence holder operates the Kanowna Belle Gold Mine (KB) under existing licence L5029/199/11. KB is situated approximately 18km north east of Kalgoorlie-Boulder within the Goldfields region.

The KB processing plant processes both sulfide-rich refractory ore from KB and free milling ore from regional mines. The processing plant utilises the carbon-in-pulp (CIP) process for ore from the Kundana Gold Mine, while ore produced from KB requires roasting. Arsenic trioxide waste is a by-product of the roasting process and is collected from the off-gasses of the roaster reactors via a baghouse.

Arsenic trioxide waste from the baghouse is collected in sealed hoppers from where it is directed by an enclosed conveyor system to an enclosed bagging station. At the bagging station the arsenic trioxide waste is deposited in United Nations approved bags (bulka bags) of approximately 1.8m³ capacity that have been constructed in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (Edition 7.6). Once the bulka bags are full, they are vacuum cleaned, sealed internally and externally in the bagging station and checked for integrity before being moved via forklift to a dedicated waste storage shed for storage. Each bulka bag weighs approximately 0.5 tonnes, and assays reveal that on average the bags comprise 5-6% arsenic.

Currently, the collected arsenic trioxide waste undergoes a dolocrete encapsulation process and is then disposed to the underground gold mine through placement within designated areas of the underground operations which are then surrounded by paste at suitable times during the life of mine (LOM). The paste used in the process is a mix of tailings sourced from the mill and concrete.

The licence holder proposes to commence transport and disposal of arsenic trioxide waste from KB to the Sandy Ridge near-surface geological waste repository. Sealed and vacuum cleaned bulka bags of arsenic trioxide waste will be loaded into fully sealed 20ft shipping containers and transported to the Class V landfill at Sandy Ridge for disposal.

The licence holder will implement the following controls for the proposed transport and disposal of arsenic trioxide waste to Sandy Ridge Class V landfill:

- arsenic trioxide waste will be contained within appropriately labelled and sealed bulka bags loaded into sealed shipping containers;
- site personnel and transport contractors involved with loading and transport of arsenic trioxide waste will undergo relevant training;
- the premises Arsenic Trioxide Waste Management Plan will be updated and site

specific waste transportation procedures will be developed;

- all vehicles involved in the transport of arsenic trioxide waste will be registered and road worthy;
- all drivers and vehicles undertaking the transport of arsenic trioxide waste will be licenced to transport the relevant Dangerous Goods (DG) Class and Controlled Waste Categories;
- road trains will display the correct signage/placards for carrying DG Class 6.1;
- relevant stakeholders and agency departments will be notified prior to transportation, as required (i.e. City of Kalgoorlie-Boulder, Shire of Coolgardie, Main Roads and Department of Fire and Emergency Services); and
- transport of arsenic trioxide waste will comply with the Australian Code for the Transport of Dangerous Goods by Road and Rail, the Controlled Waste Regulations and any other relevant legal requirement.

3.1 Amendment history

Table 2 provides the licence amendment history for L5029/1992/11.

Table 3: Licence amendment history

Instrument	Issued	Amendment
L5029/1992/11	02/06/2016	Licence amendment to allow construction of TSF1 embankment rise of 2m.
L5029/1992/11	15/07/2016	Licence amendment to allow the dewatering and transfer of tailings supernatant from Waldon Pit to the Consols Pit and Ballarat Last Chance Pits.
L5029/1992/11	25/08/2016	Licence amendment to allow Waldon Pit to be converted into an In-pit TSF. Removal of <i>category 85: sewage facility</i> as throughput capacity of the wastewater treatment plant is less than the prescribed minimum requiring registration.
L5029/1992/11	28/7/2017	<i>Amendment Notice 1</i> - to include mining tenement M27/123 be included in the premises.
L5029/1992/11	7/12/2017	<i>Amendment Notice 2</i> – to increase the throughput of ore processing from 2,000,000 to 2,500,000 tonnes per annum.
L5029/1992/11	17/9/2018	<i>Amendment Notice 3</i> – amendment to extend the duration of the Licence to 7/09/2019.
L5029/1992/11	8/10/2018	<i>Amendment Notice 4</i> – Amendment to correct an administrative error in Table of the amendment.
L5029/1992/11	27/09/2019	Amendment to licence for the operation of TSF2 following completion of works associated with W6125/2018/1; removal of decommissioned monitoring bores and the TSF1 decant pond; inclusion of new monitoring bores and TSF2 decant pond; amendment to the frequency of monitoring of bores surrounding the TSF's that are no longer used. The Amendment includes a CEO initiated consolidation of Amendment Notices 1-4 into the Licence and an amendment to extend the duration of the Licence by six months. During the consolidation DWER has not undertaken any additional risk assessment.
L5029/1992/11	27/02/2020	Amendment to revise arsenic trioxide waste disposal conditions, extend the licence duration, and include Table 4.3.1 and sections 5 and 6 which were previously removed from the licence in error.

4. Decision

- The Delegated Officer has considered the licence holder's proposal to transport and dispose of arsenic trioxide waste to the Sandy Ridge Class V landfill. The Delegated Officer reviewed the existing licence conditions relating to the handling and disposal of arsenic trioxide waste and determined the following: the existing licence includes conditions (condition 1.3.9, Table 1.3.2) which specify appropriate handling and storage requirements for arsenic trioxide waste (in powdered form) when it is on the premises;
- The existing licence conditions do not explicitly prohibit offsite disposal of arsenic trioxide waste (in powdered form), but do prohibit offsite disposal of stabilised, solidified and cured arsenic trioxide waste unless approved by the CEO;
- The management requirements specified in condition 1.3.9, Table 1.3.2 specifically apply to wastes produced on the premises that are not taken off-site for lawful use or disposal;
- As Table 1.3.2 does not apply to wastes taken off-site for lawful use or disposal, the table should not contain requirements relating to offsite disposal of wastes and these have been removed accordingly;
- Arsenic trioxide is classified as a Class 6.1 toxic substance, therefore unless stabilised in accordance with the management requirements in Table 1.3.2 of the licence, it should not be disposed of on the premises, rather should be disposed at an appropriately licensed waste facility in accordance with all regulatory requirements; and
- Licence conditions should not apply to factors beyond the boundary of the premises.

Based on the considerations above, The Delegated Officer has determined that conditions specifying wastes can or cannot be disposed offsite are not appropriate and has removed these from the licence. Additionally the Delegated Officer considers that arsenic trioxide waste which has not been stabilised in accordance with the conditions of the existing licence, and items contaminated with arsenic trioxide waste (such as bulk bags which have been used for storage of the waste), are not suitable for disposal on the premises therefore Table 1.3.2 has been amended to specify that arsenic trioxide waste which hasn't been stabilised or disposed in accordance with the conditions of the licence is not permitted to be disposed on the premises. In accordance with DWER's *Guidance Statement: Risk Assessment* a risk assessment for the transport and offsite disposal of arsenic trioxide waste has not been undertaken as these activities are adequately regulated through other approvals applicable to the transport of Dangerous Goods and controlled waste, and the approvals for the Sandy Ridge Class V landfill.

The Delegated Officer has amended Licence L5029/1992/11 in accordance with section 59(1) of the EP Act. The amendments are described in Table 4.

5. Licence Holder's comments

The licence holder was provided with the draft amended licence and amendment report on the 20 February 2020. On 26 February 2020 the licence holder responded with no comment or objection to the proposed amendment.

6. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a licence amendment will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

The Amended Licence issued as a result of this assessment supersedes all previously authorised Licences and Amendment Notices issued in relation to the Premises.

6.1 Summary of amendments

Table 3 provides a summary of the amendments made to the licence and will act as record of implemented changes. All proposed changes have been incorporated into the amended licence as part of the amendment process.

Table 4: Summary of amendments for licence L5029/1992/11

Condition/table number	Description
NA	Licence duration extended 7 April 2020 to 7 October 2025
Table 1.3.2	<p>Added the following management requirements for the disposal of arsenic trioxide waste:</p> <p>(i) The Licensee shall not dispose of arsenic trioxide waste on the premises unless:</p> <ul style="list-style-type: none"> a. the waste has undergone stabilisation treatment for stabilisation in the mobile arsenic waste treatment plant, and b. the waste meets the disposal requirements for stabilised, solidified and cured arsenic trioxide waste, as specified in this Table 1.3.2. <p>Removed the management requirement specifying that stabilised, solidified and cured arsenic trioxide waste is only authorised for offsite disposal if approved by the CEO.</p> <p>Removed the management requirement that bags used for storage of arsenic trioxide waste are only disposed at a Class V landfill facility or as approved by the CEO. Added a management requirement that the Licensee shall not dispose of bags used for storage of arsenic trioxide waste within the premises.</p>
4.3.1	Included Table 4.3.1 – Notification requirements which was previously deleted in error.
5.1 – 5.5.1	Included EPP related requirements which were previously deleted in error.
6.3 – 6.3.3	Included Works condition for tailings storage facility lift stage J which were previously deleted in error.

Caron Goodbourn
Manager Process Industries

An officer delegated by the CEO under section 20 of the EP Act

Appendix 1: Key documents

Document title	Availability
Licence amendment application form and supporting documentation submitted 29 November 2019	DWER records (DWERDT229311)
Email correspondence from Northern Star Resources - Mining Tenement extension (16/01/2020)	A1860633
Licence L5029/1992/11	accessed at www.dwer.wa.gov.au
DER, August 2016. <i>Licence Duration</i> . Department of Environment Regulation, Perth.	
DWER, December 2019, Landfill Waste Classification and Waste Definitions 1996 (as amended 2019), Department of Water and Environmental Regulation, Perth.	
DWER, June 2019. <i>Industry Regulation Guide to Licensing</i> , Department of Water and Environmental Regulation, Perth.	
DWER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Water and Environmental Regulation, Perth.	

Attachment 1: Amended Licence L5029/1992/11
