



Licence

Environmental Protection Act 1986, Part V

Licensee: Big Bell Gold Operations Pty Ltd

Licence: L8907/2015/1

Registered office: Level 3
18 - 32 Parliament Place
WEST PERTH WA 6005

ACN: 090 642 809

Premises address: Central Murchison Gold Project-Day Dawn
Mining Tenements: M21/7, M21/14, M21/44 and M21/89
CUE WA 6640
as depicted in Schedule 1.

Issue date: Thursday, 15 October 2015

Commencement date: Monday, 19 October 2015

Expiry date: Sunday, 18 October 2020

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
6	Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	50,000 tonnes or more per year	950,000 tonnes per annual period

Conditions

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

Date signed: 15 October 2015

.....
Alana Kidd

Manager – Licensing (Resource Industries)

Officer delegated under section 20
of the *Environmental Protection Act 1986*



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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 regulates 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

The Central Murchison Gold Project-Day Dawn (Day Dawn) is located approximately 650 kilometres (km) north northeast of Perth and approximately 10 km to the west of Cue, in the Midwest Region of Western Australia. Dominant land use within the Murchison bioregion is grazing of sheep and cattle on native pastures. Other land uses include unallocated Crown land, Crown reserves and mining. The nearest sensitive receptor is the Austin Downs homestead, approximately 4 km to the west of the project area.

Dewatering operations at Day Dawn involve the removal of water from the Great Fingall pit and underground, South Fingall pits, Yellow Taxi pit and Golden Crown underground and pit. It is estimated that 100,000 kilolitres (kL) of dewatering effluent water will be used for dust suppression at Day Dawn. Excess dewatering effluent water is discharged into Lake Austin or the Try Again pit. Discharge into Lake Austin is estimated at up to 950,000 kL per year for the first three years when it will then drop to 300,000 kL per year from there on. Dewatering discharge into Try Again pit is estimated at approximately 375,000 kL and will only occur for the first year of operation.

The main emission from the premises is the discharge of saline dewatering effluent water into either a disused mined pit or to the nearby hypersaline Lake Austin.

This Licence is for the operation of a new facility established under works approval W5356/2013/1.

The licences and works approvals issued for the Premises since 18/03/2013 are:

Instrument log		
Instrument	Issued	Description
W5356/2013/1	18/03/2013	New Works Approval
L8907/2015/1	15/10/2015	New Licence

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*;

'annual period' means the inclusive period from 1 October until the 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 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*;

'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
Email: info@der.wa.gov.au

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

'Licence' means this Licence numbered L8907/2015/1 and issued under the Act;

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

'mg/L' means milligrams per litre;

'm³' means cubic metres;

'mm' means millimetres;

'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;

'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 1 July to 30 September;

‘Schedule 1’ means Schedule 1 of this Licence unless otherwise stated;

‘Schedule 2’ means Schedule 2 of this Licence unless otherwise stated; and

‘spot sample’ means a discrete sample representative at the time and place at which the sample is taken.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the 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.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.

1.2 General conditions

1.2.1 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.2 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.

1.2.3 The Licensee shall:

- (a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises; and
- (b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.¹

Note1: *The Environmental Protection (Unauthorised Discharges) Regulations 2004* make it an offence to discharge certain materials into the environment.

1.3 Premises operation

1.3.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit in this section.

1.3.2 The Licensee shall ensure that any dewatering effluent shall only be managed in the following manner:

- (a) Used for dust suppression in a manner that minimises damage to surrounding vegetation; or
- (b) Discharged via discharge pipelines in accordance with conditions 1.3.3, 2.2.1 and 2.3.1.

1.3.3 The Licensee shall ensure that dewatering effluent is discharged into dams with the relevant infrastructure requirements and at the location specified in Table 1.3.1 and identified in Schedule 1.



Table 1.3.1: Containment infrastructure

Containment point reference	Dam number(s)	Material	Infrastructure requirements
Transfer dam	-	Dewatering effluent	Lined to achieve a permeability of 10^{-9} metres per second

- 1.3.4 The Licensee shall manage the dam in Table 1.3.1 such that a minimum top of embankment freeboard of 300mm is maintained.
- 1.3.5 The Licensee shall ensure that all pipelines containing dewatering effluent are either:
- equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;
 - equipped with automatic cut-outs in the event of a pipe failure; or
 - provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.
- 1.3.6 The Licensee shall:
- undertake inspections as detailed in Table 1.3.2;
 - 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
 - maintain a record of all inspections undertaken.

Table 1.3.2: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Mine dewatering pipelines	Visual integrity	Daily
Transfer dam	Visual to confirm required freeboard capacity is available	Daily
Try Again pit	Visual to confirm a freeboard of 10 metres is available	Daily during dewatering operations

2 Emissions

2.1 General

- 2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to surface water

- 2.2.1 The Licensee shall ensure that where waste is emitted to surface water from the emission point in Table 2.2.1, and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to surface water

Emission point reference	Description	Source including abatement
Lake Austin discharge	Discharge of dewatering effluent into Lake Austin	Water from dewatering of the mine pits and underground operations.

- 2.2.2 The Licensee shall discharge mine dewatering effluents via the discharge point in a manner which minimises erosion and scouring impacts, and reduces the likelihood of surface ponding.
- 2.2.3 The Licensee shall not cause or allow point source emissions to surface water greater than the limits listed in Table 2.2.2.



Table 2.2.2: Point source emission limits to surface water

Emission point reference	Parameter	Limit (including units)	Averaging period
Lake Austin discharge	Dewatering effluent water	950,000 tonnes	Annual

2.3 Point source emissions to groundwater

- 2.3.1 The Licensee shall ensure that where waste is emitted to groundwater from the emission point in Table 2.3.1, and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emission points to groundwater

Emission point reference	Description	Source including abatement
Try Again pit	Discharge of dewatering effluent into the Try Again pit	Water from dewatering of the mine pits and underground operations.

3 Monitoring

3.1 General monitoring

- 3.1.1 The Licensee shall ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
 - (c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.
- 3.1.2 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; and
 - (c) annual monitoring is undertaken at least 9 months apart.
- 3.1.3 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 and the requirements of the Licence.
- 3.1.4 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.

3.2 Monitoring of point source emissions to surface water

- 3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.



Table 3.2.1: Monitoring of point source emissions to surface water					
Emission point reference	Parameter	Units	Limit	Averaging period	Frequency
Lake Austin dewatering discharge sampling point	Volumetric flow rate	m ³ /day	-	Monthly	Continuous
	Total Recoverable Hydrocarbons	mg/L	15 mg/L	Spot sample	Quarterly
	Total Dissolved Solids and Total Suspended Solids		-		
	pH ¹	-	-		
	Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium and Zinc	mg/L			Annual

Note 1: In-field non-NATA accredited analysis permitted.

3.3 Monitoring of point source emissions to groundwater

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of point source emissions to groundwater				
Emission point reference	Parameter	Units	Averaging period	Frequency
Try Again pit dewatering discharge sampling point	Volumetric flow rate	m ³ /day	Monthly	Continuous
	Total Dissolved Solids and Total Suspended Solids	mg/L	Spot sample	Quarterly
	pH ¹	-		
	Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium and Zinc	mg/L		Annual

Note 1: In-field non-NATA accredited analysis permitted.

4 Information

4.1 Records

- 4.1.1 All information and records required by the Licence shall:
- be legible;
 - if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - except for records listed in 4.1.1(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
 - for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - off-site environmental effects; or
 - matters which affect the condition of the land or waters.
- 4.1.2 The Licensee shall ensure that:
- 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
 - 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.
- 4.1.3 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.



- 4.1.4 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.

4.2 Reporting

- 4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 90 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form ¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 3.2.1	Specified monitoring of point source to surface water	WR1
Table 3.3.1	Specified monitoring of point source to groundwater	GR1
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

- 4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
- (a) any relevant process, production or operational data; and
 - (b) an assessment of the information contained within the report against previous monitoring results and Licence limits.

- 4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form ¹
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties

Note 1: Forms are in Schedule 2

4.3 Notification

- 4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 5.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
-	Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution.	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1

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

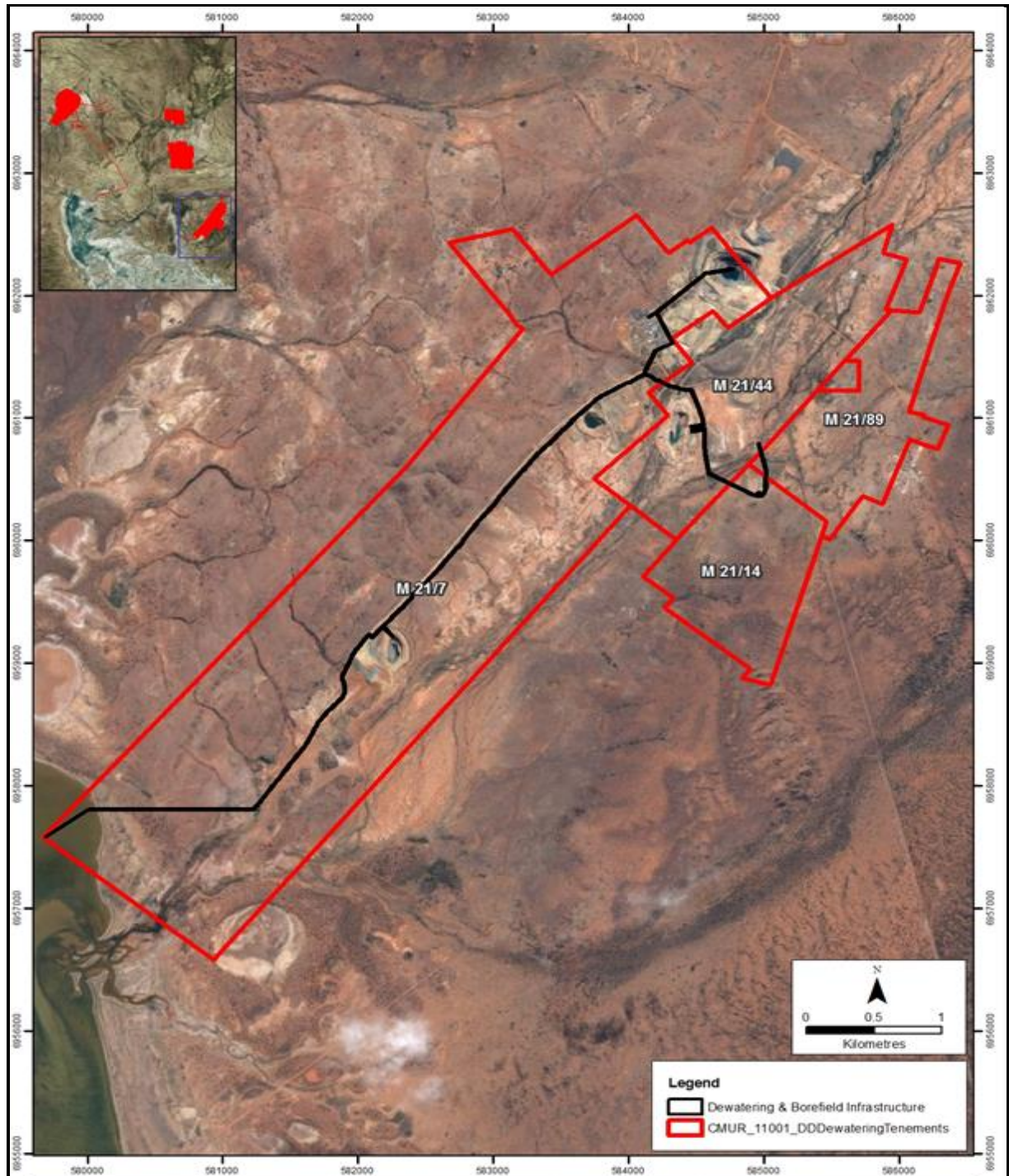
Note 2: Forms are in Schedule 2



Schedule 1: Maps

Premises map

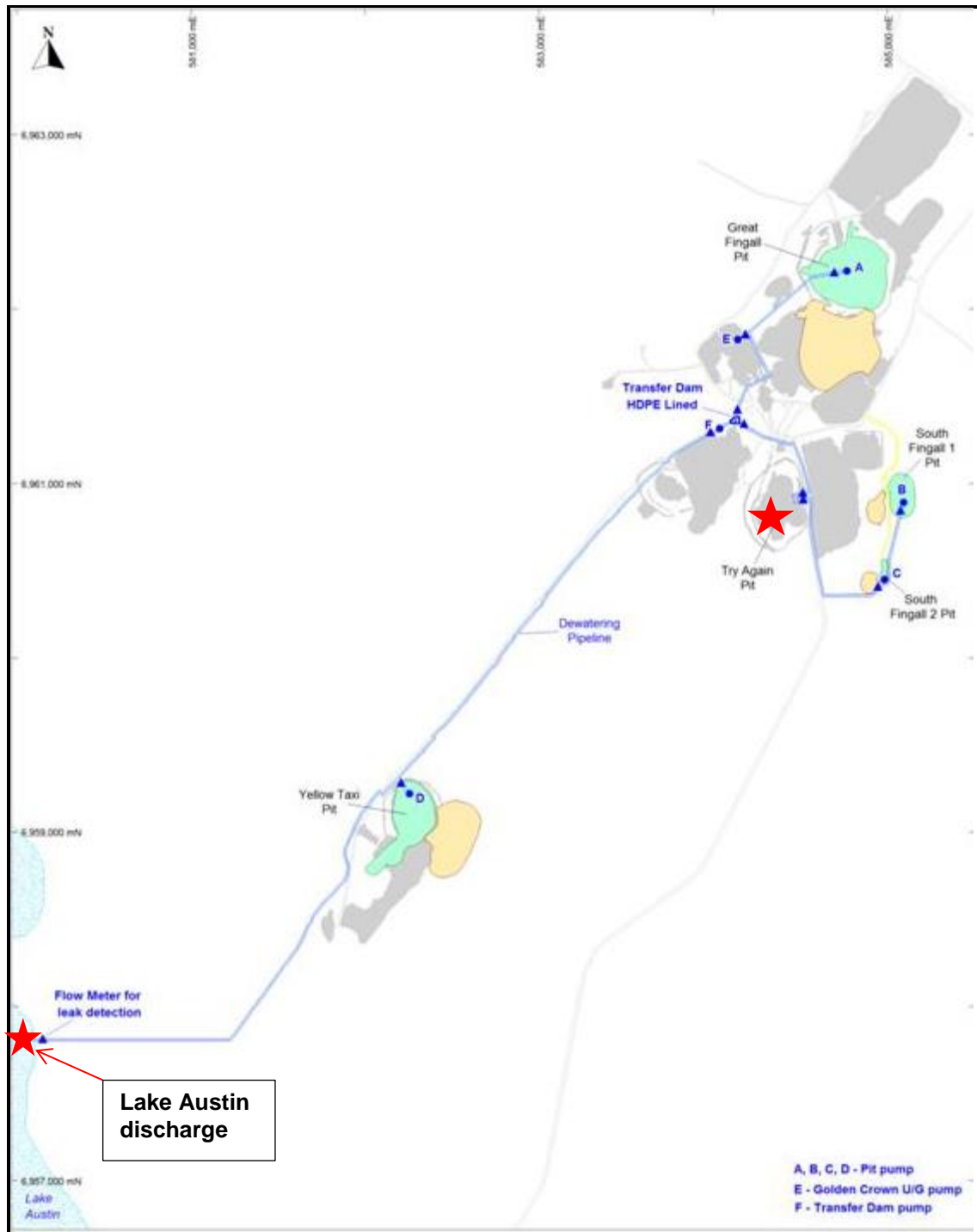
The Premises is shown in the map below. The red line depicts the Premises boundary.





Map of emission points

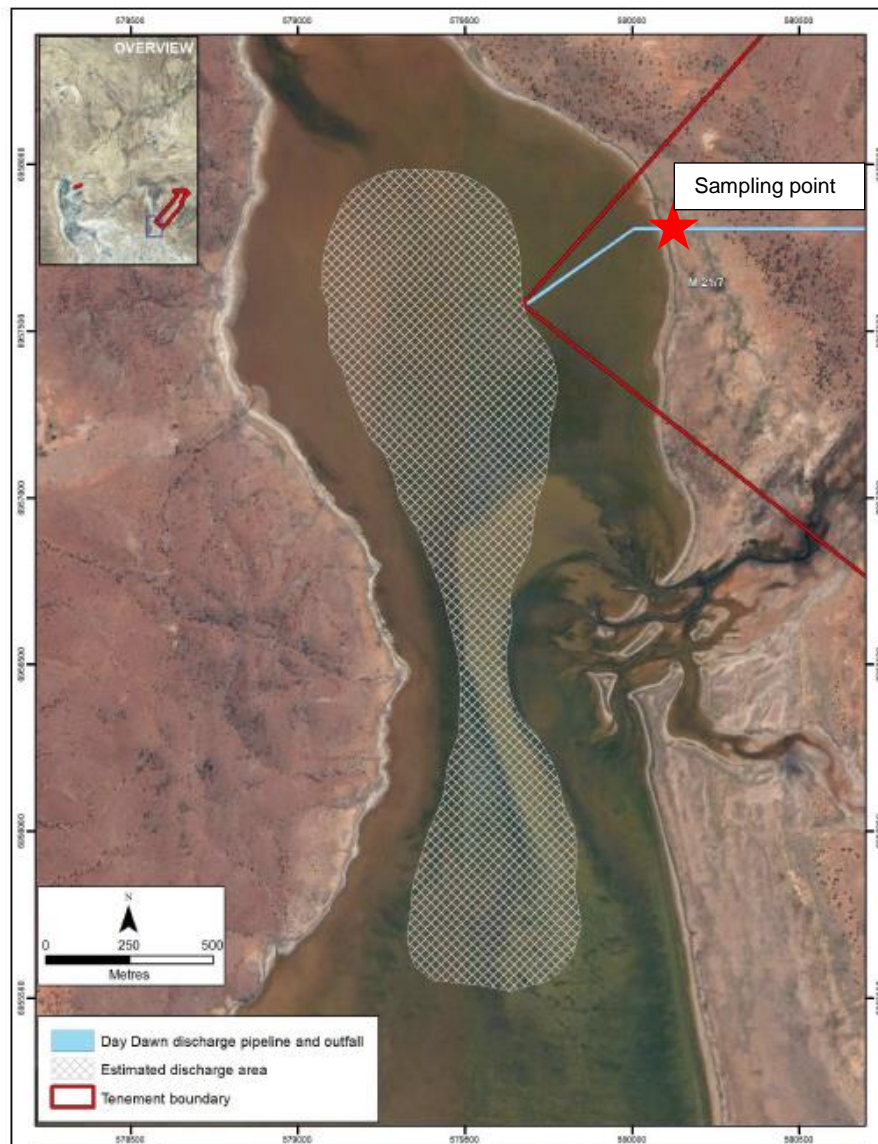
The locations of the emission points defined in Tables 2.2.1 and 2.3.1 are shown below.





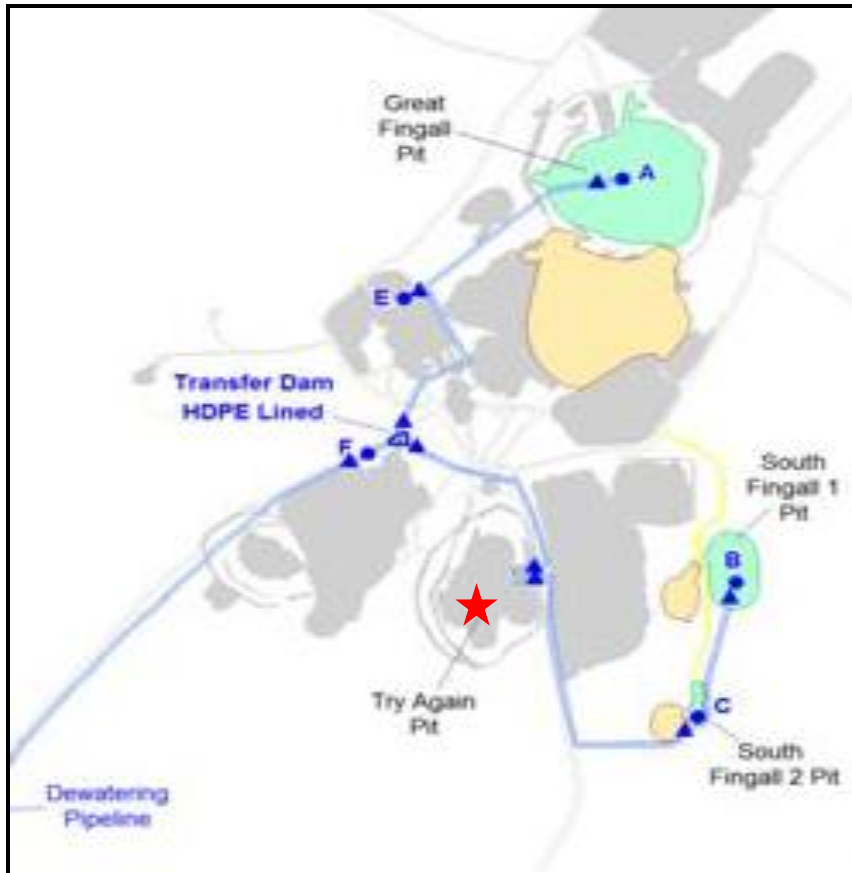
Map of monitoring locations

The location of the monitoring point defined in Table 3.2.1 is shown below.





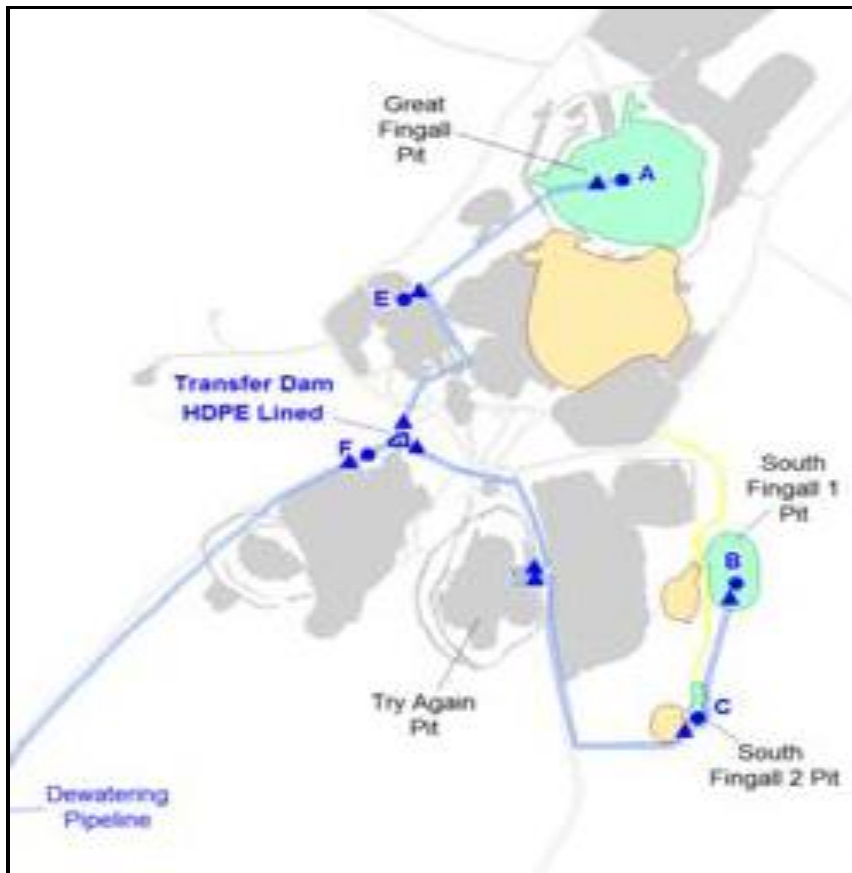
The location of the monitoring point defined in Table 1.3.1 is shown below.





Map of storage locations

The location of the storage area defined in Table 1.3.1 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?:	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____	<input type="checkbox"/> 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) must 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	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; 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)	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/>	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: ____/____/____

SEAL (if signing under seal)

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____



Licence: L8907/2015/1
Form: WR1
Name: Monitoring of point source emissions to surface water

Licensee: Big Bell Gold Operations Pty Ltd
Period :

Emission point	Parameter	Result	Sample date & times
Dewatering discharge into Lake Austin	Volumetric flow rate	m ³ /month	
	pH ¹	-	
	Total Dissolved Solids	mg/L	
	Total Suspended Solids	mg/L	
	Total Recoverable Hydrocarbons	mg/L	
	Arsenic	mg/L	
	Cadmium	mg/L	
	Chromium	mg/L	
	Cobalt	mg/L	
	Copper	mg/L	
	Lead	mg/L	
	Nickel	mg/L	
	Selenium	mg/L	
	Zinc	mg/L	

Note 1: in-field non-NATA accredited analysis permitted.

Signed on behalf of Big Bell Gold Operations Pty Ltd: Date:



Licence: L8907/2015/1
Form: GR1
Name: Monitoring of point source emissions to groundwater

Licensee: Big Bell Gold Operations Pty Ltd
Period :

Emission point	Parameter	Result ¹	Sample date & times
Dewatering discharge into Try Again pit	Volumetric flow rate	m ³ /month	
	pH	-	
	Total Dissolved Solids	mg/L	
	Total Suspended Solids	mg/L	
	Arsenic	mg/L	
	Cadmium	mg/L	
	Chromium	mg/L	
	Cobalt	mg/L	
	Copper	mg/L	
	Lead	mg/L	
	Nickel	mg/L	
	Selenium	mg/L	
	Zinc	mg/L	

Note 1: in-field non-NATA accredited analysis permitted.

Signed on behalf of Big Bell Gold Operations Pty Ltd: Date:



Licence: L8907/2015/1
Form: N1

Licensee: Big Bell Gold Operations Pty Ltd
Date of breach:

Notification of detection of the breach of a limit.

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	



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 Big Bell Gold Operations Pty Ltd	
Date	



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Big Bell Gold Operations Pty Ltd

Licence: L8907/2015/1

Registered office: Level 3
18 - 32 Parliament Place
WEST PERTH WA 6005

ACN: 090 642 809

Premises address: Central Murchison Gold Project-Day Dawn
Mining Tenements: M21/7, M21/14, M21/44 and M21/89
CUE WA 6640

Issue date: Thursday, 15 October 2015

Commencement date: Monday, 19 October 2015

Expiry date: Sunday, 18 October 2020

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a 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: Paul Anderson
Licensing Officer

Decision Document authorised by: Alana Kidd
Manager Licensing



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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 <input type="checkbox"/> New Licence <input checked="" type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	6	950,000 tonnes per annual period
Application verified	Date: 13/8/2015	
Application fee paid	Date: 20/08/2015	
Works Approval has been complied with	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Compliance Certificate received	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/>



		Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

This Licence is for the operation of a new facility assessed and established under works approval W5356/2013/1 which was issued on the 18 March 2013. The assessment of the risks posed by the construction and the operation of the Central Murchison Gold Project – Day Dawn was found to be low.

The Central Murchison Gold Project-Day Dawn (Day Dawn) is located approximately 650 kilometres (km) north northeast of Perth and approximately 10 km to the west of Cue, in the Midwest Region of Western Australia. Dominant land use within the Murchison bioregion is grazing of sheep and cattle on native pastures. Other land uses include unallocated Crown land, Crown reserves and mining. The nearest sensitive receptor is the Austin Downs homestead, approximately 4 km to the west of the project area.

The Big Bell Gold Mine was previously licenced to operate at this Premises through *Environmental Protection Act 1986* Licence L7264/1998/1 which was issued in June 2000 and expired March 2008. The Licence was issued for category 6 - mine dewatering, with the dewatering effluent being discharged into the Try Again pit and Lake Austin. No mining has occurred at the Premises since Licence L7264/1998/1 has expired.

Big Bell Gold Operations Pty Ltd (BBGO) proposes to dewater open pits and underground operations at Day Dawn, and discharge up to 950,000 kilolitres (kL) of the dewatering effluent water per year to Lake Austin and to the disused Try Again pit. The dewatering operation is the only prescribed activity occurring onsite with all mined ore transported to the nearby licenced Blue Bird Gold Mine (L4496/1988/1) for processing. All employees at Day Dawn are accommodated in the nearby town of Cue.

Lake Austin is an ephemeral system located approximately 15 km south of Cue. The total surface area of the lake is approximately 773 square kilometres (km²), and excluding the numerous islands equates to about 444 km². Surface and groundwater flows drain centrally into the lake which is predominantly flat, ranging from 0.5 m to 2 m in depth. The lake usually remains dry for lengthy periods.



An aquatic assessment of Lake Austin was undertaken by Outback Ecology in 2011. During the aquatic assessment the Lake was flooded and provided an opportunity to obtain water quality data. The pH of surface waters was alkaline and ranged from 7.53 to 8.65. Salinities of the surface waters ranged from 14,200 mg/L total dissolved solids (TDS) (hyposaline) to 250,000 mg/L TDS (hypersaline). The major constituent ions were sodium (Na) and chloride (Cl). Concentrations of most metals and trace elements were below detection, with copper being the exception, exceeding the ANZECC value for marine waters (0.008 mg/L) at six of the seven sites. TDS in groundwater at Lake Austin is greater than 200,000 mg/L.

Water analysis of the disused pit lakes in 2012 shows salinity at about 20,000 to 30,000 mg/L TDS in most of the mine pits at Day Dawn. The Yellow Taxi pit has higher salinity (up to 114,000 mg/L TDS) than the other pits. The Try Again pit (receiving pit) has a TDS of 57,800 mg/L. The local groundwater is only 10 metres below ground level and directly interacts with the mined pits. Groundwater sampling shows groundwater is saline at Day Dawn which is also indicated by the high salinities of the mined pits.

Dewatering operations at Day Dawn will involve the removal of water from the Great Fingall pit and underground, South Fingall pits, Yellow Taxi pit and Golden Crown underground and pit. It is estimated that 100,000 kL of the dewatering effluent water will be used for dust suppression at Day Dawn.

Discharge into Lake Austin is estimated at up to 950,000 kL per year for the first three years when it will then drop to 300,000 kL per year until the end of 2019 when dewatering is expected to cease. Dewatering discharge into Try Again pit is estimated at approximately 375,000 kL and will only occur for the first year of operation. A description of the water balance for the dewatering operations at Day Dawn is provided in the Table below.

Day Dawn Water Balance	First year	Second Year	Third Year	Ongoing
Total Dewatering	935,000kL	950,000kL	1,000,000kL	350,000kL
Dust suppression	100,000kL	100,000kL	50,000kL	50,000kL
Excess Lake Austin	460,000kL	850,000kL	950,000kL	300,000kL
Excess Try Again pit	375,000kL	0	0	0

The discharge outfall into Lake Austin is located approximately 400 m onto a large elongated embayment that opens onto the lake, avoiding fringing vegetation. The embayment is surrounded by several inflow channels, which enter from the north and east and are described to have a southerly directional flow following rainfall. The embayment associated with the dewatering discharge is considered to be relatively deep compared to other areas of Lake Austin and drains two substantial inflows from the northern part of the catchment. The embayment covers approximately 4 km² before opening onto a broader section of the lake. The dewatering discharge is expected to pool within a localised area. The discharge outfall is fitted with an energy diffusion device to minimise any erosion or scouring of the lake.

The pit lake water at the Yellow Taxi pit plus any expected inflow will be pumped directly to Lake Austin. The inflow into South Fingall pits, plus the Great Fingall pit lake water and expected inflow will be pumped to the Try Again pit. BBGO have committed to maintaining the SWL in the Try Again pit no higher than 10 m bgs.

Once the Try Again pit is at capacity, water from the Great Fingall pit will be pumped directly to the Day Dawn Transfer Dam. The transfer dam will help reduce the suspended solids to be discharged to the lake and has a retention time of 27 hours. The transfer dam will discharge directly to Lake Austin. The dam is equipped with level sensors to prevent overfilling. A freeboard of at least 300 millimetres (mm) will be maintained. The Transfer Dam has been lined to achieve a permeability of 2×10^{-10} metres per second.



Once Great Fingall pit dewatering is sufficiently advanced, the Golden Crown underground mine dewatering program will commence using a borehole pump suspended within an existing shaft. Dewatering effluent water will be pumped to the Transfer Dam prior to being discharged to Lake Austin.

DER considers that BBGO's commitments and internal procedures, as well as the conditions of the Licence, will provide sufficient protection that the risks can be appropriately managed. This Licence has not been assessed as a high risk premises requiring reduced time frames and has been issued for the standard period of five years.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* 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
General conditions	L1.2.1 – L1.2.3	Operation Condition 1.2.1 is included in the Licence to ensure all pollution and monitoring equipment is operated and maintained in accordance with the manufacturer's specifications. Condition 1.2.2 is included in the Licence to ensure the recovery or removal and disposal of spills of environmentally hazardous materials outside an engineered containment system. Condition 1.2.3 is included in the Licence to ensure contaminated stormwater is treated prior to discharge, and the implementation of measures to prevent stormwater becoming contaminated.	Application supporting documentation General provisions of the <i>Environmental Protection Act 1986</i> . <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>
Premises operation	L1.3.1 to L1.3.5	Operation Condition 1.3.1 is included in the Licence to ensure any exceedance of a descriptive limit is recorded and investigated. Condition 1.3.2 is included in the Licence to ensure dewatering effluent is only used for dust suppression or discharged to location identified in conditions 1.3.3, 2.2.1 and 2.3.1. Condition 1.3.3 is included in the Licence to identify the infrastructure requirements and	Application supporting documentation General provisions of the <i>Environmental Protection Act 1986</i> .



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>location of the dewatering containment dam (Transfer dam).</p> <p>Condition 1.3.4 is included in the Licence to ensure a minimum freeboard is maintained in the Transfer dam.</p> <p>Condition 1.3.5 is included in the Licence which requires all dewatering pipelines to have:</p> <ul style="list-style-type: none"> telemetry systems and pressure sensors to allow the detection of leaks and failures; automatic cut-outs; or secondary containment sufficient to contain any spill for a period equal to the time between routine inspections. <p>Condition 1.3.6 is included in the Licence to ensure routine inspections are conducted of the dewatering pipelines, Transfer dam and the the Try Again pit.</p>	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>
Emissions general	L2.1.1	<p>Operation</p> <p>Descriptive limits are set through condition 2.2.1 of the licence and therefore a condition regarding recording and investigation of exceedances of limits has been included.</p>	N/A
Point source emissions to surface water including monitoring	L2.2.1 to L2.2.3 L3.2.1	<p>Operation</p> <p>Condition 2.2.1 is included in the Licence to identify the location of the dewatering discharge into Lake Austin.</p> <p>Condition 2.2.2 is included in the Licence to ensure the Licensee discharges dewatering effluent water into Lake Austin in a manner which minimises erosion and scouring, and reduces the likelihood of surface ponding.</p> <p>Condition 2.2.3 is included in the Licence that sets a limit on the volume of dewatering discharge effluent that is permitted to be discharged to surface water per year. The limit reflects the assessed capacity of dewatering operations at Day Dawn.</p>	<p>Application supporting documentation</p> <p><i>General provisions of the Environmental Protection Act 1986.</i></p> <p><i>Environmental</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>BBGO has committed in their Works Approval application to conduct:</p> <ul style="list-style-type: none">• annual major component analysis water quality monitoring of all extraction points and Lake Austin discharge point; and• quarterly monitoring for TDS and pH of water from all extraction points and Lake Austin discharge point. <p>The commitments made by BBGO to routinely sample dewatering effluent discharged into Lake Austin and have those samples analysed for particular parameters has been included in the Licence as condition 3.2.1. The monitoring of the pit waters (extraction points) have not been included in the Licence because background analysis has already been established prior to dewatering from these points and the water quality is not expected to vary greatly during the entire pit lake dewatering operation.</p> <p>Following the dewatering of the pit lakes, dewatering of the underground operations will commence to allow under ground mining to occur. All extracted water from the underground operations will be discharged to Lake Austin. With the use of equipment and the storage of hydrocarbons underground, there is the potential for contamination of Lake Austin . Therefore the requirement of quarterly sampling for Total Recoverable Hydrocarbons (TRH) has been included in condition 3.2.1. There are no adopted standards for TRH values for dewatering discharge waters to surface waters. Other licenced dewatering operations discharging pit water to similar surface waters like Lake Austin have a TRH limit set at 15 mg/L. Therefore a limit of 15 mg/L for TRH has been included in condition 3.2.1.</p> <p>The TDS of pit waters to be dewatered range from 20,000 to 30,000 mg/L except for Yellow Taxi pit which has a TDS up to 114,000 mg/L. The receiving pit (Try Again) has a TDS of 57,800 mg/L and Lake Austin up to 250,000 mg/L. Considering the high salinities of the discharge waters and the receiving environments, and the water is not suitable for use, DER has not set limits for TDS in the Licence.</p>	<i>Protection (Unauthorised Discharges) Regulations 2004</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		Water samples have been taken from the pit lakes and from underground monitoring bores and results indicate heavy metals were found to be less than the health guidelines for drinking water, with the exception of cadmium (1.5 times the guideline value) and mercury (4.4 times the guideline value) in the Great Fingall sample. Although cadmium and mercury were found to be above drinking water guidelines, no impacts to the receiving environment is considered at these low levels.	
Point source emissions to groundwater including monitoring	L2.3.1 L3.3.1	<p>Operation Condition 2.3.1 is included in the Licence to identify the location of the dewatering discharge into the Try Again pit.</p> <p>The discharge of dewatering water into the Try Again pit from the dewatering of pit lakes is only expected to last 12 months. Condition 3.3.1 is included in the Licence to ensure the dewatering effluent water discharged into the Try Again pit is sampled and analysed for particular parameters while dewatering is occurring.</p> <p>The pit lakes to be dewatered have a TDS range of 20,000 to 30,000 mg/L (except Yellow Taxi pit but that is discharged to Lake Austin only) with the receiving pit (Try Again) having a TDS of 57,800 mg/L. Therefore as the TDS of the receiving pit is far greater than the source, limits for TDS have not been included.</p> <p>Water sampling results from water samples taken from all the pits (except Yellow Taxi pit) indicate heavy metal levels are the same or very similar. Therefore limits have not been included in condition 3.3.1. Yellow Taxi pit lake water will not be discharged in Try Again pit and therefore not considered in this part of the assessment.</p> <p>Discharge into the Try Again pit is only for a 12 month period and there are no sources of potential hydrocarbon contamination of the pits to be dewatered. Therefore, the sampling for TRH in dewatering discharge waters to the Try Again pit has not been included in the Licence.</p>	<p>Application supporting documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Monitoring general	L3.1.1 to 3.1.4	<p>Operation Condition 3.1.1 is included in the Licence to ensure all water sampling is conducted in accordance with the relevant Australian and New Zealand standards, and all samples are analysed at an NATA accredited laboratory.</p> <p>Condition 3.1.2 is included in the Licence to ensure each monitoring event is separated by a particular time frame.</p> <p>Condition 3.1.3 is included in the Licence to ensure all monitoring equipment used at the Premises is calibrated.</p> <p>Condition 3.1.4 is included in the Licence which requires the Licensee to contact the CEO if the requirements of calibration cannot be practicably met.</p>	<p>Application supporting documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i>.</p>
Information	L4.1.1 to 4.1.4 L4.2.1 to 4.2.3 L4.3.1	<p>Operation Administrative conditions including keeping of records, reporting requirements and notification have been included in the Licence.</p>	<p>Application supporting documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i>.</p>
Licence Duration	N/A	The Central Murchison Gold Project – Day Dawn is considered low risk and therefore the Licence will be issued for a 5 year period.	N/A



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
31/08/2015	Application advertised in West Australian (or other relevant newspaper)	No comments received	N/A
9/10/2015	Proponent sent a copy of draft instrument	No comments received	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