Licence

Licence Number	L9065/2017/1
Licence Holder	Bungaroo South Pty Ltd
ACN	152 574 528
Registered business address	Level 1, 15 Rheola Street WEST PERTH WA 6005
File Number	DER2017/001023
Duration	03/10/2017 to 02/10/2033
Date of issue	03/10/2017
Prescribed Premises	Category 5: Processing or beneficiation of metallic or non metallic ore
Premises	Bungaroo South Mine Mining Lease M47/1464 SHIRE OF ASHBURTON WA 6716 As defined by the coordinates in Schedule 1 of the Licence

This Licence is granted to the Licence Holder, subject to the following conditions, on 3 October 2017, by:

03 October 2017

Alana Kidd

MANAGER LICENSING (RESOURCES NORTH)

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Explanatory notes

These explanatory notes do not form part of this Licence.

Defined terms

Definition of terms used in this Licence can be found at the start of this Licence. Terms which are defined have the first letter of each word capitalised throughout this Licence.

Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation (DWER) is established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the *Environmental Protection Act 1986* (WA) (EP Act). The Department also monitors and audits compliance with licences, takes enforcement action and develops and implements licensing and industry regulation policy.

Licence

Section 56 of the EP Act provides that an occupier of Prescribed Premises commits an offence if Emissions are caused or increased, or permitted to be caused or increased, or Waste, noise, odour or electromagnetic radiation is altered, or permitted to be altered, from Prescribed Premises, except in accordance with a works approval or licence.

Categories of Prescribed Premises are defined in Schedule 1 of the *Environment Protection Regulations 1987* (WA) (EP Regulations).

This Licence does not authorise any activity which may be a breach of the requirements of another statutory authority including, but not limited to the following:

- conditions imposed by the Minister for Environment under Part IV of the EP Act;
- conditions imposed by DWER for the clearing of native vegetation under Part V, Division 2 of the EP Act;
- any requirements under the *Waste Avoidance and Resource Recovery Act 2007;*
- any requirements under the *Environmental Protection (Controlled Waste) Regulations 2004*; and
- any other requirements specified through State legislation.

It is the responsibility of the Licence Holder to ensure that any action or activity referred to in this Licence is permitted by, and is carried out in compliance with, other statutory requirements.

The Licence Holder must comply with the Licence. Contravening a Licence Condition is an offence under s.58 of the EP Act.

Responsibilities of a Licence Holder

Separate to the requirements of this Licence, general obligations of Licence Holders are set out in the EP Act and the regulations made under the EP Act. For example, the Licence Holder must comply with the following provisions of the EP Act:

- the duties of an occupier under section 61; and
- 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 (s.53).

Strict penalties apply for offences under the EP Act.

Reporting of incidents

The Licence Holder has a duty to report to DWER all discharges of waste that have caused or are likely to cause Pollution, Material Environmental Harm or Serious Environmental Harm, in accordance with s.72 of the EP Act.

Offences and defences

The EP Act and its regulations set out a number of offences, including:

- Offence of emitting an Unreasonable Emission from any Premises under s.49.
- Offence of causing Pollution under s.49.
- Offence of dumping Waste under s.49A.
- Offence of discharging Waste in circumstances likely to cause Pollution under s.50.
- Offence of causing Serious Environmental Harm (s.50A) or Material Environmental Harm (s.50B).
- Offence of causing Emissions which do not comply with prescribed standards (s.51).
- Offences relating to Emissions or Discharges under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA).*
- Offences relating to noise under the *Environmental Protection (Noise) Regulations 1997 (WA).*

Section 53 of the EP Act provides that a Licence Holder commits an offence if Emissions are caused, or altered from a Prescribed Premises unless done in accordance with a Works Approval, Licence or the requirements of a Closure Notice or an Environmental Protection Notice.

Defences to certain offences may be available to a Licence Holder and these are set out in the EP Act. Section 74A(b)(iv) provides that it is a defence to an offence for causing Pollution, in respect of an Emission, or for causing Serious Environmental Harm or Material Environmental Harm, or for discharging or abandoning Waste in water to which the public has access, if the Licence Holder can prove that an Emission or Discharge occurred in accordance with a Licence.

This Licence specifies the Emissions and Discharges, and the limits and Conditions which must be satisfied in respect of Specified Emissions and Discharges, in order for the defence to offence provision to be available.

Authorised Emissions and Discharges

The Specified and General Emissions and Discharges from Primary Activities conducted on the Prescribed Premises are authorised to be conducted in accordance with the Conditions of this Licence.

Emissions and Discharges caused from other activities not related to the Primary Activities at the Premises have not been Conditioned in this Licence. Emissions and Discharges from other activities at the Premises are subject to the general provisions of the EP Act.

Amendment of licence

The Licence Holder can apply to amend the Conditions of this Licence under s.59 of the EP Act. An application form for this purpose is available from DWER.

The CEO may also amend the Conditions of this Licence at any time on the initiative of the CEO without an application being made.

Amendment Notices constitute written notice of the amendment in accordance with s.59B(9) of the EP Act.

Duration of Licence

The Licence will remain in force for the duration set out on the first page of this Licence or until it is surrendered, suspended or revoked in accordance with s.59A of the EP Act.

Suspension or revocation

The CEO may suspend or revoke this Licence in accordance with s.59A of the EP Act.

Fees

The Licence Holder must pay an annual licence fee. Late payment of annual licence fees may result in the licence ceasing to have effect.

Late fees are a component of annual licence fees and should a Licence Holder fail to pay late fees within the time specified the licence will similarly cease to have effect.

Definitions and interpretation

Definitions

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

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Notice	means an amendment granted under s.59 of the EP Act in accordance with the procedure set out in s.59B of the EP Act.
Annual Period	means a 12 month period commencing from 1 October until 30 September the following year.
Condition	means a condition to which this Licence is subject under s.62 of the EP Act.
Books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 33 Cloisters Square PERTH WA 6850 info-der@dwer.wa.gov.au
Compliance Report	means a report in a format approved by the CEO as presented by the Licence Holder or as specified by the CEO (guidelines and templates may be available on the Department's website).
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
Department Request	means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Licence Holder in writing and sent to the Licence Holder's address for notifications, as described at the front of this Licence, in relation to: (a) compliance with the EP Act or this Licence; (b) the Books or other sources of information maintained in accordance with this Licence; or (c) the Books or other sources of information relating to Emissions from the Premises.
Discharge	has the same meaning given to that term under the EP Act.

DWER	Department of Water and Environmental Regulation.
Emission	has the same meaning given to that term under the EP Act.
Environmental Harm	has the same meaning given to that term under the EP Act.
EP Act	means the *Environmental Protection Act 1986* (WA).
EP Regulations	means the *Environmental Protection Regulations 1987* (WA).
Implementation Agreement or Decision	has the same meaning given to that term under the EP Act.
Inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
Licence	refers to this document, which evidences the grant of a Licence by the CEO under s.57 of the EP Act, subject to the Conditions.
Licence Holder	refers to the occupier of the premises being the person to whom this Licence has been granted, as specified at the front of this Licence.
Material Change	means a change to the activities carried out on the Premises as described by the Primary Activities set out in Schedule 2 that may result in an increased risk to public health, amenity or the environment.
Material Environmental Harm	has the same meaning given to that term under the EP Act.
Pollution	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Licence applies, as specified at the front of this Licence and as shown on the map in Schedule 1 to this Licence.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Primary Activities	refers to the Prescribed Premises activities listed on the front of this Licence as described in Schedule 2, at the locations shown in Schedule 1.
Reportable Event	means an exceedance above the target limit specified in Column 4 of Table 6, in Schedule 3.
Serious Environmental Harm	has the same meaning given to that term under the EP Act.

Unreasonable Emission	has the same meaning given to that term under the EP Act.
Waste	has the same meaning given to that term under the EP Act.

Interpretation

In this Licence:

(a) the words ‘including’, ‘includes’ and ‘include’ will be read as if followed by the words ‘without limitation’;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a Condition, each row in a table constitutes a separate Condition;

(d) any reference to an Australian or other standard, guideline or code of practice in this Licence means the version of the standard, guideline or code of practice in force at the time of granting of this Licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Licence; and

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act.

Conditions

Emissions

1. The Licence Holder must not cause any Emissions from the Primary Activities on the Premises except for general Emissions described in Column 1 of Table 2 subject to the exclusions, limitations or requirements specified in Column 2 of Table 2.

Table 2: Authorised Emissions table

Column 1	**Column 2**
Emission type	**Exclusions/Limitations/Requirements**
General Emissions	
Emissions which: • arise from the Primary Activities set out in Schedule 2	Emissions excluded from General Emissions are: • Unreasonable Emissions; or • Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or • Discharges of Waste in circumstances likely to cause Pollution; or • Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or • Emissions or Discharges which do not comply with an Approved Policy; or • Emissions or Discharges which do not comply with a prescribed standard; or • Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or • Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental *Protection (Unauthorised Discharges) Regulations 2004*.

Infrastructure and equipment

2. The Licence Holder must ensure that the infrastructure and equipment specified in Column 1 of Table 3 is maintained in good working order and operated in accordance with the requirements specified in Column 2 of Table 3.

Table 3: Infrastructure and equipment controls table

Column 1	**Column 2**
Site infrastructure and equipment	**Operational requirements**
Mobile Crushing and Screening Plant	• Process no more than 1,000,000 tonnes per year; and • Fitted with fogging and surface wetting sprays at material transfer points on conveyors, bins, crushers and screens, that are operational when Mobile Crushing and Screening Plant is operating.
Stormwater retention / storage infrastructure	• To be constructed at each location the Mobile Crushing and Screening Plant is operated; • Water diversion bunds or levees to be established around processing and storage areas to prevent contamination of clean water; • All runoff water from disturbed areas shall be collected in stormwater retention bunds of sufficient storage capacity to accommodate the maximum recorded rainfall intensity over a 24-hour period; and • Stormwater retention bunds shall be constructed to allow adequate retention time to reduce suspended sediment load prior to discharge.
Hydrocarbon storage facilities	• Shall comply with Australian Standard (AS) 1940 – 2004 'The Storage and Handling of Flammable and Combustible Liquids'; and • Shall include spill kits with sufficient quantities of absorbent materials, equipment for recovering spilled materials and containers for storing recovered materials.

Record-keeping

3. The Licence Holder must maintain accurate and auditable Books including the

following records, information, reports and data required by this Licence:

(a) the calculation of fees payable in respect of this Licence;

(b) the maintenance of infrastructure required to ensure that it is kept in good working order in accordance with Condition 2 of this Licence;

(c) complaints received under Condition 4 of this Licence; and

(d) any Material Change.

In addition, the Books must:

(e) be legible;

(f) if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;

(g) be retained for at least 3 years from the date the Books were made; and

(h) be available to be produced to an Inspector or the CEO.

4. The Licence Holder must record the number and details of any complaints received by the Licence Holder relating to its obligations under this Licence and its compliance with Part V of the EP Act at the Premises, and any action taken by the Licence Holder in response to the complaint. Details of complaints must include:

(a) an accurate record of the concerns or issues raised, for example a copy of any written complaint or a written note of any verbal complaints made;

(b) the name and contact details of the complainant, if provided by the complainant;

(c) the date of the complaint; and

(d) the details and dates of the actions taken by the Licence Holder in response to the complaints.

5. The Licence Holder must submit to the CEO, no later than 31 October in each year, a Compliance Report indicating the extent to which the Licence Holder has complied with the Conditions in this Licence for the preceding Annual Period.

6. The Licence Holder must comply with a Department Request, within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

Schedule 1: Maps

Premises map

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

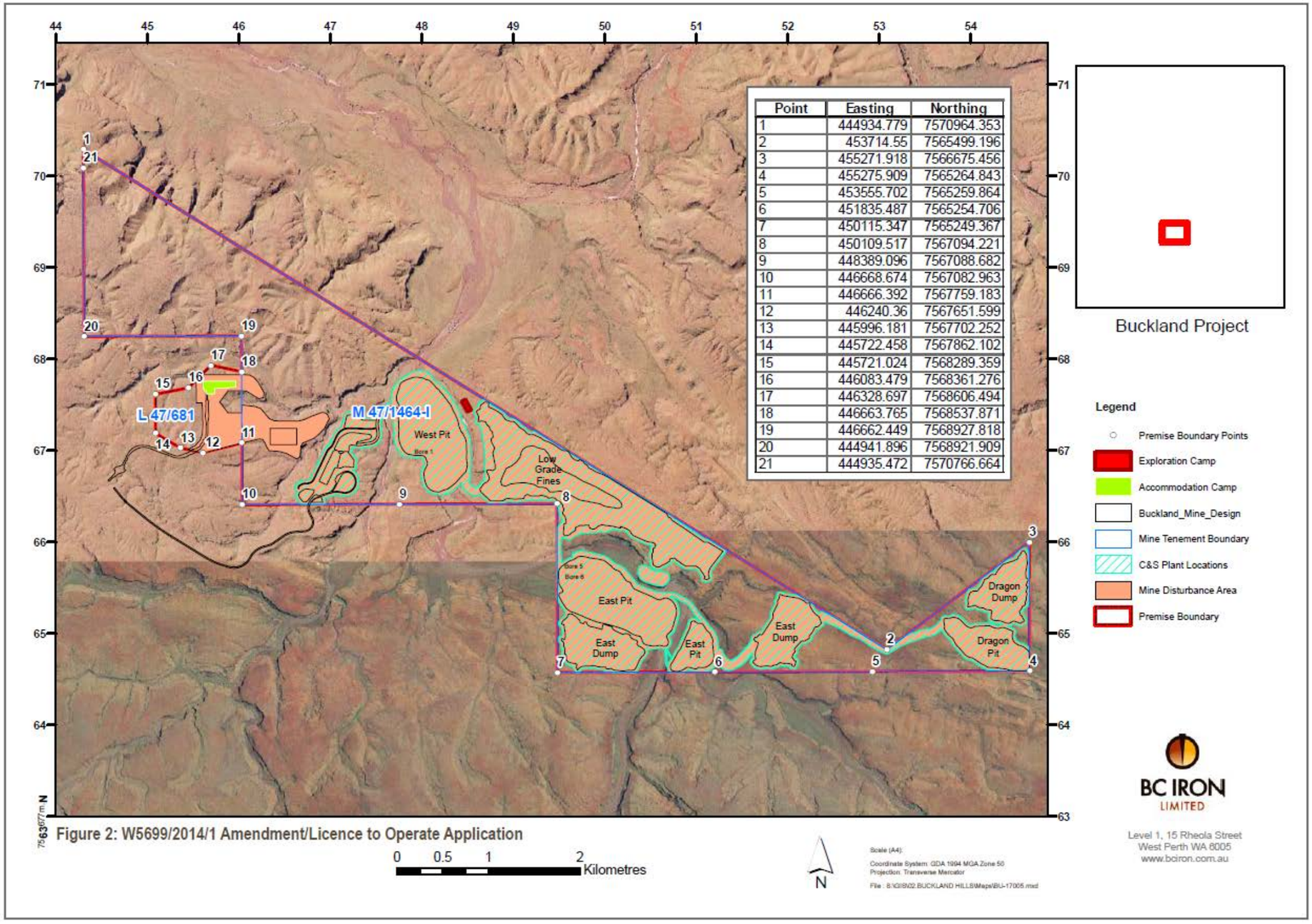

Figure 2: W5699/2014/1 Amendment/Licence to Operate Application

Schedule 2: Primary Activities

At the time of assessment, Emissions and Discharges from the following Primary Activities were considered in the determination of the risk and related Conditions for the Premises.

The Primary Activities are listed in Table 4:

Table 4: Primary Activities

Primary Activity	Premises production or design capacity
Category 5 - Processing or beneficiation of metallic or non metallic ore: premises on which — (a) metallic or non metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non metallic ore are reprocessed; or (c) tailings or residue from metallic or non metallic ore are discharged into a containment cell or dam.	1 000 000 tonnes per Annual Period

Infrastructure and equipment

The Primary Activity infrastructure and equipment situated on the Premises is listed in Table 5.

Table 5: Infrastructure and equipment

Infrastructure and equipment	Plan reference
Mobile Crushing and Screening Plant	Premises Map: areas showing C&S Plant locations (depicted as diagonal fill)
Stormwater retention / storage infrastructure	Not shown
Hydrocarbon storage infrastructure: • 1 x self bunded 80,000 L diesel tank; • 1 x self bunded 10,000L diesel tank; and • minor storage (1,000 L Intermediate Bulk Containers) of hydraulic oil, engine oil, grease and coolant.	Not shown

Site layout

The Primary Activity infrastructure and equipment is set out on the Premises in accordance with the site layout specified on the Premises map in Schedule 1.

Decision Report

E

Application for Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L9065/2017/1
Applicant	Bungaroo South Pty Ltd
ACN	152 574 528
File Number	DER2017/001023
Premises	Bungaroo South Mine Mining Lease M47/1464 SHIRE OF ASHBURTON WA 6716 As defined by the coordinates in Schedule 1 of the Licence
Date of Report	3 October 2017
Status of Report	Final

Table of Contents

List of Tables

List of Figures

1. Definitions of terms and acronyms

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

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
Annual Period	Means a 12 month period commencing from 1 October until 30 September the following year.
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CS Act	*Contaminated Sites Act 2003* (WA)
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the *Public Sector Management Act 1994* and is responsible for the administration of the *Environmental Protection Act 1986* along with other legislation.
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this Review
Licence Holder	Bungaroo South Pty Ltd
m^3	cubic metres
mbgl	Metres below ground level

Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
NEPM	National Environmental Protection Measure
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	has the same meaning given to that term under the EP Act.
PDWSA	Public Drinking Water Source Area
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
Primary Activities	as defined in Schedule 2 of the Revised Licence
Risk Event	As described in *Guidance Statement: Risk Assessment*
tpa	tonnes per annum
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)

2. Purpose and scope of assessment

Bungaroo South Pty Ltd (the Applicant) submitted an application to DWER for a Licence under the EP Act. The application is to operate a mobile crushing and screening plant (C&SP) to process up to 1 mtpa of iron ore at the Bungaroo South Mine (the Premises) located within the Shire of Ashburton. The Premises is also located within the Priority 1 Public Drinking Water Supply Area (PDWSA), the Bungaroo Creek Water Reserve.

Construction of the mobile crushing and screening plant (C&SP) was approved via an amendment to Works Approval W5699/2014/1 processed in July 2017. The original Works Approval assessed construction of Prescribed Premises Category 5 processing of ore (via a larger, permanent Ore Processing Facility), category 6 mine dewatering and category 54 sewage facility. Construction of this infrastructure has not yet commenced, however is expected to occur in the next 12 months. The Applicant applied to amend W5699/2014/4 to incorporate the construction of the mobile C&SP on the Premises prior to finalising construction of the remaining permanent mine facilities.

This Decision Report assesses the proposal to operate the mobile C&SP only, to process ore as part of initial operations. The C&SP will be primarily used to process ore from a number of bulk test pits to assist with securing contracts for the sale of ore produced on the premises.

This assessment has resulted in DWER issuing Licence L9065/2017/1 (Issued Licence) which is contained in Attachment 1.

2.1 Application details

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: Works Approval Amendment and Licence Application	14 June 2017
Attachment 2: Premises Map	
Attachment 3A: Description of Activities. Bungaroo South Pty Ltd. Works Approval W5666/2014/1 Amendment / Licence to Operate Application Category 5	
Attachment 3A: Works Approval Application. Iron Ore Holdings Limited. Bungaroo South Pty Ltd Buckland Project. REV 1 JUNE 2014	
Attachment 4: Other Approvals	
Attachment 7: Siting and Location	
Attachment 9: Fee Calculations	
Bungaroo Licence Application: additional supporting documents including: • Information on hydrocarbon storage volumes and type; and • Buckland Project – Minesite Water Quality Monitoring and Management Plan – Version D August 2016	10 August 2017

3. Background

The Premises is located on Mining Lease M47/1464, which is occupied by the Applicant. The Premises is part of a larger iron ore project located approximately 45km south-southeast of

Pannawonica, known as the Buckland Project. The Buckland Project involves mining iron ore from three deposits (two of which comprise the Bungaroo South Mine), processing the ore on site and transporting the ore product by road to Cape Preston East for export overseas.

Transportation of ore is proposed via a purpose built 176 km haul road to Cape Preston East. The expected mine life is 15-20 years and will involve disturbance of up to 2,050 hectares (ha) for the mine area and haul road. Mining will progress to below the water table and therefore mine pits will require dewatering to access the orebodies. Surplus dewater will be re-used onsite or disposed of via sub-surface reinjection / recharge or (as a contingency) controlled discharge to surface water bodies. The Project will also include construction of waste rock dumps and waste fines storage facilities, with eventual backfilling of mine voids with waste materials. Power generation, worker accommodation and supporting infrastructure will also be constructed

The permanent Ore Processing Facility, sewage facility and dewatering activities to be constructed in the future to cater for the larger ore throughputs associated with mining the Buckland is not assessed in this Decision Report.

While EP Act (Part V) approvals for construction of categories 5, 6 and 54 prescribed premises have been approved under W5699/2014/1, this Decision Report and associated Licence relates only to the proposal to relocate and operate the mobile C&SP at a maximum design capacity of 1 mtpa. The Applicant will need to seek further approvals from DWER in relation to operation of the permanent OPF and the category 6 and 54 Prescribed Premises (once constructed) associated with the Bungaroo South Mine as operations ramp up.

This Decision Report assesses emissions and discharges associated with the operation of the mobile C&SP, associated hydrocarbon storage and stormwater management infrastructure.

Table 3: Prescribed Premises Categories

Classification of Premises	**Description**	***Approved premises production or design capacity or throughput***
Category 5	Processing or beneficiation of metallic or non metallic ore: premises on which — (a) metallic or non metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non metallic ore are reprocessed; or (c) tailings or residue from metallic or non metallic ore are discharged into a containment cell or dam.	<1 000 000 tonnes per Annual Period

4. Overview of Premises

4.1 Operational aspects

The C&SP to be used on the Premises will be a mobile plant capable of processing up to 1 mtpa. The Applicant estimates the likely annual throughput will be around 150,000 tpa. Figure 1 depicts a process flow chart for the crushing and screening process to be carried out on the Premises.

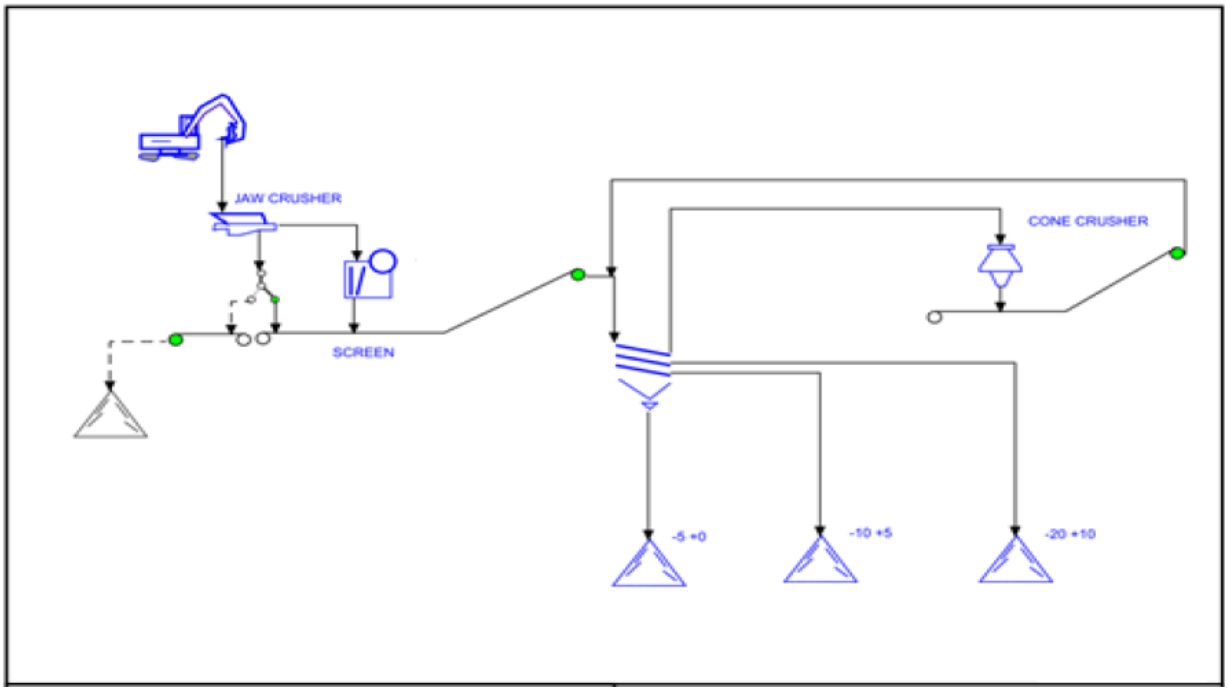

Figure 1: Process Flow Chart – crushing and screening process

The mobile crushing and screening process will generally occur as follows:

- Areas to be mined will be surveyed, pegged, inspected and then cleared of native vegetation;
- Topsoil will be removed and stockpiled for rehabilitation activities;
- Raw materials are excavated and fed into the hopper of a vibrating feeder. This moves the materials to the jaw crusher;
- The resulting materials are then sent via a conveyor to a secondary crushing process before being conveyed to a vibrating screen for separating; and
- After separating to appropriate sizes for final product (12 mm) and stockpiling, materials not meeting final specifications will be returned for re-crushing.

The product from the C&SP will either be loaded straight onto long haul road trains via the use of a Front-End Loader for stockpiling at the main stockpile area adjacent to the OPF (approved under W5699/2014/1) or sent direct to market as Direct Shipped Ore. Applicable management measures for processed stockpiles during operations will be as follows:

- Material will be stockpiled in a designated stockpiling area;
- Drainage from the site will be managed to prevent movement of sediment from erosion into the surrounding environment;
- Stockpiles, if required, will be stabilised to prevent erosion from wind or water;
- Site surfaces will be shaped to allow for natural drainage and to avoid pooling or ponding;
- Water diversion bunds or levees will be established around minor storage areas to prevent the cross-contamination of clean water; and
- Existing natural drainage paths and channels will not be unnecessarily blocked or restricted.

4.2 Infrastructure

The Premises infrastructure, as it relates to the initial Category 5 activities, is detailed in Table 4 and with reference to the Premises Layout (shown in Figure 2 and the attached Licence).

Table 4: Bungaroo South Mine Category 5 infrastructure

	Infrastructure	**Site Plan Reference**
	Prescribed Activity Category 5	
The Applicant will operate a mobile crushing and screening plant in various locations within the approved mine disturbance area (as indicated in Figure 1)		
1	Mobile Crushing and Screening Plant (design capacity of 1 mtpa) including: • Primary jaw crusher; • Secondary cone crusher; • Screens, conveyors etc.	Figure 1
2	Drainage infrastructure (water diversion bunds, levees, drains and sedimentation basins) to for management of contaminated stormwater	Not shown
3	Hydrocarbon storage facilities (not Prescribed) as follows: • 1 x 80,000 L diesel tank; • 1 x 10,000L diesel tank; • 2 x 1000 L hydraulic oil; • 1 x 1000 L engine oil; • 1 x 1000 L grease; • 1 x 1000 L miscellaneous fluids (transmission / coolant); and • spill response kits.	Not shown

Figure 2 depicts the Premises Layout and boundary showing areas within which the mobile C&SP will be operated.

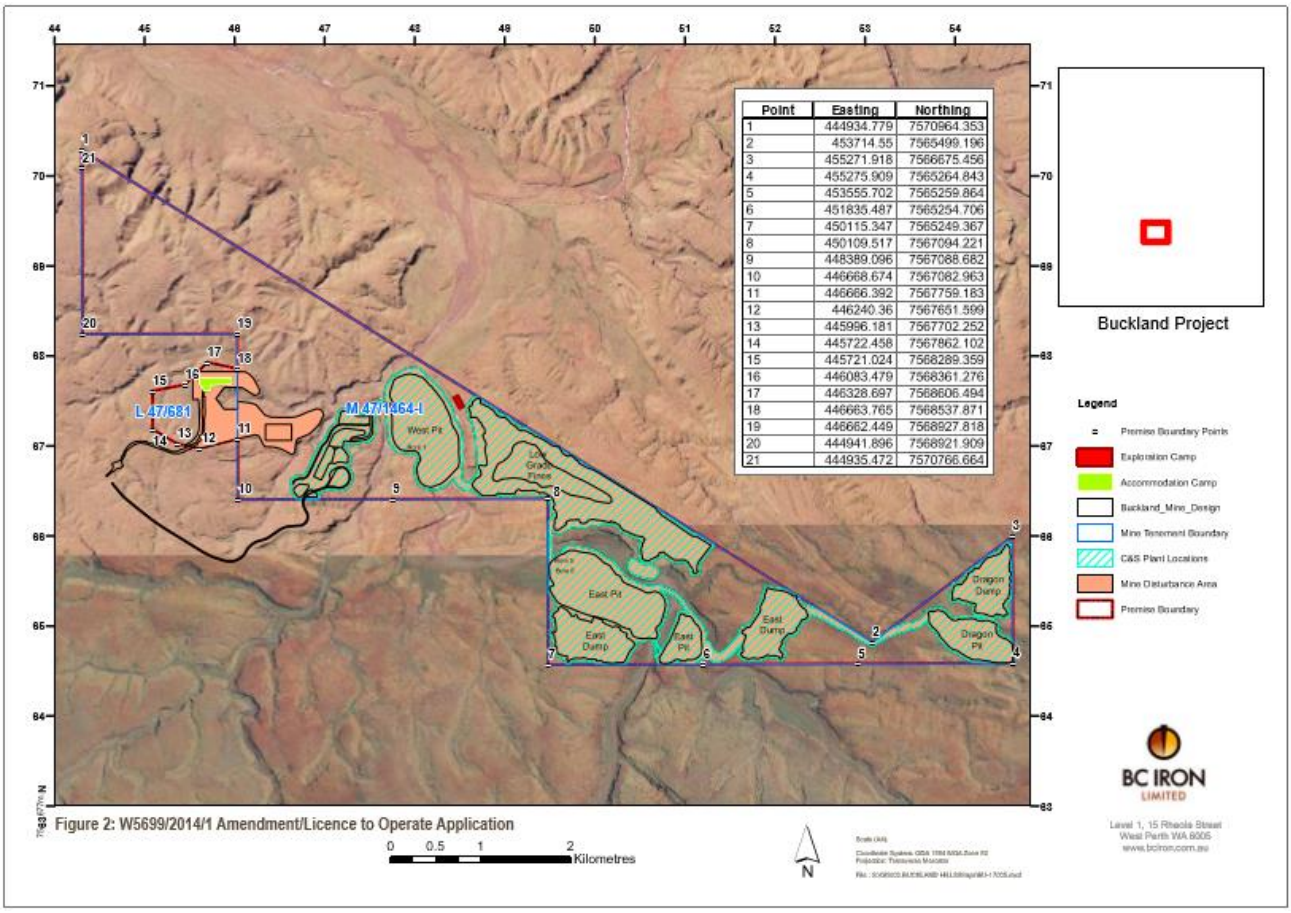

Figure 2: Premises layout – Bungaroo South Mine.

5. Legislative context

Table 5 summarises approvals relevant to the assessment.

Table 5: Relevant approvals and tenure

Legislation	Number	Approval
Environmental Protection Act 1986	Ministerial Statement 960	MS 960 contains a range of legally-binding conditions covering the mining operations including: •Inland Waters Environmental Quality; •Hydrological Processes; •Flora and Vegetation; •Terrestrial Fauna; and •Residual Impacts and Risk Management Measures
Mining Act 1978	Mining Proposal REG ID 47739	Buckland (including Bungaroo South) mining operations and associated infrastructure
Rights in Water and Irrigation Act 1914	GWL158473(5)	Hamersley – Fortescue Aquifer: 45,000kL per year
	GWL164672(4)	Hamersley – Fractured Rock Aquifer: 45,000kL per year
	GWL171847(2)	Wittenoom – Wittenoom Aquifer: 45,000kL per year

Legislation	Number	Approval
	GWL177962(1)	Hamersley – Fractured Rock Aquifer: 212,000kL per year

5.1 Part IV of the EP Act

5.1.1 Background

The Buckland Project was referred to the (then) Environmental Protection Authority (EPA) (now DWER) on 19 November 2012. The project level of assessment was set at Assess on Proponent Information. The EPA released their report on 4 December 2013 (Report 1496) and the subsequent Ministerial Statement (MS) 960 was published on 12 February 2014.

EPA Report 1496 identified and evaluated the following key environmental factors associated with the Buckland Project:

- Inland Waters Environmental Quality
- Hydrological Processes
- Flora and Vegetation
- Terrestrial Fauna
- Offsets (integrating factor)

Environmental impacts associated with the mine haul road that will service the Premises was considered by the EPA, however, these impacts are not related to the subject of this licence Application and as such, will not be considered in this Decision Report. The environmental factor that has potential overlap with this Licence Application includes Inland Waters Environmental Quality.

5.1.1.1 Inland Waters Environmental Quality

The EPA's environmental objective for this factor is *to maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.*

The Premises is located in a Priority 1 PDWSA (Bungaroo Creek Water Reserve). The EPA found that the disposal of surplus mine dewater and seepage of leachate from waste facilities has the potential to impact the quality of surface and groundwater downstream, the Bungaroo Creek Water Supply Borefield (BCWSB), located 19 km downstream of the Premises.

The EPA considered that the proposal can be managed to meet the objectives for Inland Waters Environmental Quality provided the Applicant prepares and implements a Water Quality Monitoring and Management Plan (WQMMP) which includes:

- obtaining baseline data of surface and groundwater quality prior to implementing the proposal;
- undertaking kinetic testing of waste material to be backfilled; and
- monitoring drainage from the waste landforms and groundwater in the vicinity.

The WQMMP considers potential impacts from hydrocarbon storage and use on the Premises and lists design and operational controls as well as monitoring measures to be implemented to reduce the risk of leaks, spills or losses during operations. The WQMMP also considers potential impacts from stormwater and runoff across the Premises and lists design, operational and monitoring controls to reduce the risk of discharge of contaminated stormwater discharges.

5.1.2 Ministerial Statement 960

MS 960 contains a range of legally-binding conditions covering the mining operations and haul road as recommended in the EPA Report 1496. Of particular relevance to this Application (in relation to category 5 operations) are the following requirements:

- Condition 6.1 of MS 960 requires the Proponent to ensure that mining operations do not change the quality of surface and groundwater downstream of the mine development envelope. Water quality parameters (surface water and groundwater) must not exceed the *Australian Drinking Water Guidelines 2011 Guideline Values*, except for parameters that show natural exceedances as demonstrated by baseline water quality data;
- Condition 6.2 of MS 960 requires the Proponent to prepare a WQMMP to set the framework for monitoring for potential impacts to water quality, set water quality criteria trigger values and identify contingency measures in the event monitoring detects possible impacts.

5.2 Other relevant approvals

5.2.1 Planning approvals

Advice was sought from Shire of Ashburton on 7 August 2017 to determine if any planning approvals are required for the Premises and to seek comment on the proposal. No comments were received.

5.2.2 Department of Mines, Industry Regulation and Safety

The Department of Mines, Industry Regulation and Safety (DMIRS) was consulted regarding the Application on 7 August 2017. DMIRS responded on 18 August 2017 confirming that the Applicant has obtained a *Mining Act 1978 (WA)* approval in 2016 allowing for dry and wet processing of iron ore at the Premises and that DMIRS has recently (July 2017) approved a Letter of Intent for the addition of a mobile crushing and screening plant to the Project facilities. The DMIRS has no concerns or comments in relation to the Licence Application.

5.2.3 Department of Biodiversity, Conservation and Attractions

The Department of Biodiversity, Conservation and Attractions (DBCA) was consulted regarding the Application on 7 August 2017. DBCA responded on 4 September 2017 noting that the Buckland Project has approval under Part IV of the EP Act under MS 960. DBCA notes the location of the Priority 1 Ecological Community (PEC) *Stygofaunal community of the Bungaroo aquifer* within the development footprint. The PEC is located within the groundwater aquifer and therefore the appropriate protection and management of the quality and quantity of groundwater in the aquifer should also be able to provide for an appropriate management strategy for the PEC. MS 960, Condition 6 requires the preparation and implementation of a Water Quality Monitoring and Management Plan to ensure protection of the priority 1 drinking water area. This plan, along with appropriate drainage and spill management should be able to manage any potential impacts on the PEC.

DBCA also notes the Applicant's identification of the proposed West Hamersley Conservation Park. It should be noted that this area was informally proposed as a reserve by CALM and has not been progressed or agreed to as a reserve proposal by government.

5.2.4 Federal Legislation

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The Buckland Project was referred to the Australian Government Department of Sustainability, Environment, Water, Population and Communities (now Department of the Environment) in

May 2013 for assessment under the EPBC Act. On 19 July 2013, the delegate of the Commonwealth Minister for Environment determined that the proposed action was not a controlled action provided specific measures were taken to avoid significant impacts on the Northern Quoll. These measures included a limit of removing no more than 12.83 ha of northern quoll (*Dasyurus hallucatus*) denning habitat and the development of a Northern Quoll Management Strategy that describes avoidance and mitigation measures, a monitoring and review program and measures for performance review, compliance auditing and reporting.

5.3 Part V of the EP Act

5.3.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements and subsidiary legislation which inform this assessment are*:*

- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Environmental Siting (November 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Environmental Protection (Noise) Regulations 1997*

5.3.2 Works approval history

W5699/2014/1 was issued to the Applicant on 24 February 2016 approving construction of prescribed premises category 5 processing of ore, category 6 mine dewatering and category 54 sewage facility. An amendment to W5699/2014/1 was processed in July 2017 to increase category 5 design capacity by 1 mtpa and allow the operation of the mobile C&SP.

Table 6 summarises the works approval and licence history for the Premises.

Table 6: Works approval history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W5699/2014/1	24/02/2016	Works approval issued (categories 5, 6 and 54)
W5699/2014/1	24/7/2017	Amendment Notice 1: increase category 5 production design capacity from 8,000,000 to 9,000,000 tonnes per year and allow construction of mobile C&SP

5.3.3 Clearing

Clearing of native vegetation approvals associated with development of mining proposals is delegated to the DMIRS and, as such, is not considered in this Decision Report.

No clearing of native vegetation is approved by this licence amendment

6. Consultation

The application for licence was advertised in the West Australian on 7 August 2017 to seek public comment. No comments were received. In addition, notification of the application and invitation to comment was sent to the Shire of Ashburton, DMIRS and DBCA on 7 August 2017 (refer section 5.2).

7. Location and siting

7.1 Siting context

The Premises is located in the Pilbara Region within the major physiographic unit of the Hamersley Subregion. Predominant land uses include pastoral activities, mining and conservation. The Bungaroo South mine is located entirely within Unallocated Crown Land and also within the proposed West Hamersley Range Conservation Park. The proposed conservation park was initially recommended in 2002 to ensure species and floristic communities recorded from summit (upland) habitats in the Hamersley Ranges are protected within the conservation estate.

The mine area is within the Bungaroo Creek Water Reserve, a Priority 1 PDWSA. Areas to be mined are not near the wellhead protection zones that have been established around the water supply borefield. The Bungaroo Creek Water Reserve is a future groundwater source for the supply of drinking water into the West Pilbara Water Supply Scheme. Figure 3 shows the regional location of the Bungaroo South Mine Prescribed Premises, as well as the Bungaroo Creek Water Reserve and proposed West Hamersley Range Conservation Park.

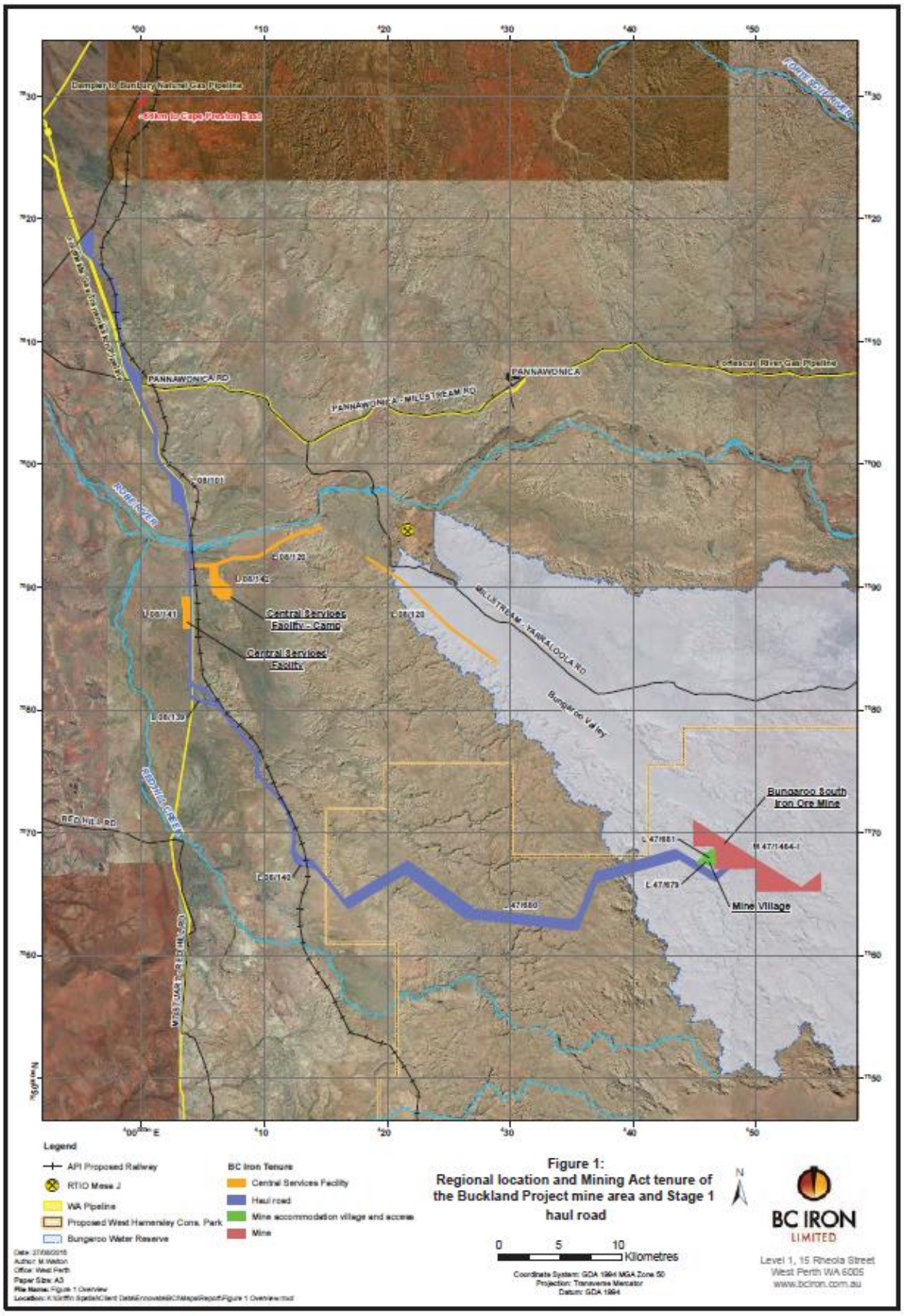

Figure 3: Regional location of the Bungaroo South Iron Ore Mine.

7.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 7.

Table 7: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Township of Pannawonica	45km north northwest of the Premises boundary

7.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or Emissions and Discharges from the Premises. The distances to specified ecosystems are shown in Table 8.

Specified ecosystems are defined in the *Guidance Statement: Environmental Siting* (DWER 2016a).

Table 8: Environmental values

Specified ecosystems	Distance from the Premises
Ramsar Sites in Western Australia	There are no Ramsar Sites within a 20km radius of the Premises
Parks and Wildlife Managed Lands and Waters	There are no Parks and Wildlife managed lands or waters within a 20km radius of the Premises. The Premises is located within the proposed West Hamersley Range Conservation Park.
Waterways Conservation Areas	There are no Waterways Conservation Areas within a 20km radius of the Premises
Threatened Ecological Communities and Priority Ecological Communities	A Priority Ecological Community (*Stygofaunal community of the Bungaroo aquifer)* is recoded as being within and surrounding the Premises boundary.
Biological component	**Distance from the Premises**
Threatened/Priority Flora	Four Priority Flora taxa were recorded within the mine development envelope and would be impacted by mining activities: • Indigofera sp. Bungaroo Creek (P3); • Sida sp. Barlee Range (P3); • Triodia sp. Robe River (P3); and • Rhynchosia bungarensis (P4). All priority species have been recorded at other locations outside the mine development envelope and are not restricted to the mine development envelope.

7.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 9.

Table 9: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Public drinking water source areas	Within and surrounding the Premises boundary	Bungaroo Creek Water Reserve (P1 Drinking Water Source Area) proclaimed under the *Country Areas Water Supply Act 1947*. Bungaroo Creek Water Supply Borefield (BCWSB), located 19 km downstream of the Premises.
Major watercourses/waterbodies	Within are adjacent to Premises boundary	Several significant streams / coarse and medium scale watercourses that are tributaries of Bungaroo Creek are located within the Premises boundary
Groundwater	Depth to groundwater is 8–30 m below ground level in a deep bed of alluvium, overlying Channel Iron Deposit	Groundwater is of good quality with pH of 6-8.6, Total Dissolved Solids (TDS) 300–400 mg/L and alkalinity 80–100 mg/L (as CaCO3). Groundwater naturally contains levels of aluminium, iron and manganese above Australian Drinking Water Guidelines.

7.5 Meteorology

7.5.1 Rainfall and temperature

The North-west Pilbara area has an arid-tropical climate with hot summers (wet season) from October to April and mild winters (dry season) from May to September.

Average rainfall in the area is less than 300 mm/year with most falling between December and April. Annual rainfall statistics can vary dramatically depending on the influence of thunderstorms and cyclone activity, which can bring events of up to 600 mm as Cyclone Joan did in 1975. Mean annual evaporation is extremely high, usually more than 3000 mm/yr, or about ten times annual rainfall.

Climate data from the nearby Bureau of Meteorology (BOM) station in Pannawonica (45km from the Premises) has been used as a surrogate for Bungaroo South Mine.

The average annual rainfall in Pannawonica is 404 mm. Average annual maximum daily temperatures reach around 41 degrees Celsius in summer months and around 26 degrees in winter months. Figure 4 shows the mean maximum monthly temperatures and mean monthly rainfall experienced in Pannawonica.

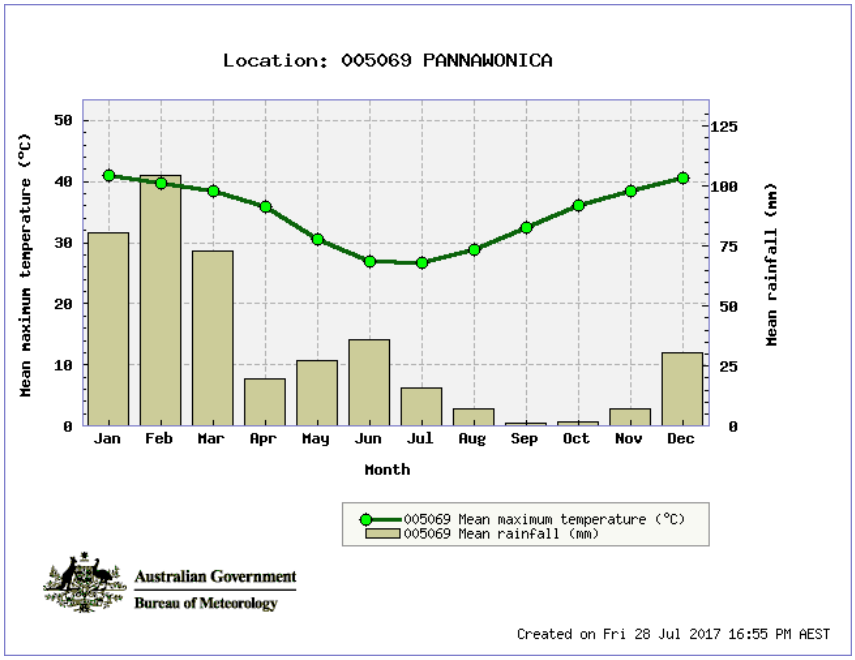

Figure 4: Pannawonica Mean Maximum Temperature and Mean Rainfall (BoM 2017)

8. Risk assessment

8.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment (DER 2016b).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 10.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table 10 below.

Table 10: Identification of emissions, pathway and receptors during operation

Risk Events						**Continue to detailed risk assessment**	**Reasoning**
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Cat 5 *Processing or beneficiation of metallic or non-metallic ore*	*Operation of crushing infrastructure and movement of ore product via conveyor*	***Dust**: associated with ore handling*	*No receptor nearby.* *Township of Pannawonica is 45km north northeast.*	*Air / wind dispersion*	*Health and amenity impacts*	*No*	*No residences or sensitive land uses present.* *The Applicant will implement a range of controls to minimise dust, including:* • *Visual monitoring and implementing the corrective actions outlined below as required;* • *minimisation of ground disturbance;* • *application of water during earthworks and on open areas and roads as required;* • *the mobile crushing and screening plant will be fitted with fogging and surface wetting sprays at material*
		Noise: *From operation of the mobile crushing and screening plant*					

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
							transfer points on conveyors, bins, crushers and screens. *Noise emissions are expected to comply with the Noise Regulations.*
		Stormwater: *may potentially become contaminated with sediment / fine ore particles*	*Soils* *Aquatic ecosystems including several medium scale perennial watercourses within the premises boundary.* *Bungaroo Creek Water Reserve (P1 PDWSA)* *Depth to groundwater ranges from 8-30mbgl*	*Path of stormwater: Direct discharge, infiltration*	*Contamination of soils, surface water bodies.*	*Yes*	*Refer section 8.4*
	Hydrocarbon storage facilities / refuelling activities	***Spills or leaks of hydrocarbons***	*Soils* *Aquatic ecosystems including several medium scale perennial watercourses within the premises boundary.* *Bungaroo Creek Water Reserve (P1 PDWSA)* *Depth to groundwater ranges from 8-30mbgl*	*Direct discharge, infiltration*	*Contamination of soils, surface water bodies.* *Pollution of groundwater*	*Yes*	*Refer section 8.5*

8.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 11 below.

Table 11: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 12 below.

Table 12: Risk criteria table

Likelihood		**Consequence**		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		**The following criteria has been used to determine the consequences of a Risk Event occurring:**		
			Environment	**Public health* and amenity (such as air and water quality, noise, and odour)**
Almost Certain	The risk event is expected to occur in most circumstances	Severe	• **onsite impacts**: catastrophic • **offsite impacts local scale**: high level or above • **offsite impacts wider scale:** mid-level or above • Mid to long-term or permanent impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are significantly exceeded	• Loss of life • **Adverse health effects:** high level or ongoing medical treatment • Specific Consequence Criteria (for public health) are significantly exceeded • **Local scale impacts:** permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	• **onsite impacts**: high level • **offsite impacts local scale**: mid-level • **offsite impacts wider scale**: low level • Short-term impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are exceeded	• **Adverse health effects:** mid-level or frequent medical treatment • Specific Consequence Criteria (for public health) are exceeded • **Local scale impacts**: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	• **onsite impacts**: mid-level • **offsite impacts local scale**: low level • **offsite impacts wider scale**: minimal • Specific Consequence Criteria (for environment) are at risk of not being met	• **Adverse health effects:** low level or occasional medical treatment • Specific Consequence Criteria (for public health) are at risk of not being met • **Local scale impacts:** mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	• **onsite impacts**: low level • **offsite impacts local scale**: minimal • **offsite impacts wider scale**: not detectable • Specific Consequence Criteria (for environment) likely to be met	• Specific Consequence Criteria (for public health) are likely to be met • **Local scale impacts:** low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	• **onsite impact**: minimal • Specific Consequence Criteria (for environment) met	• **Local scale**: minimal to amenity • Specific Consequence Criteria (for public health) met

^ Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting* (DER 2016a).
* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines* (DoH 2010)
"onsite**"** means within the Prescribed Premises boundary.

8.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 13 below:

Table 13: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

8.4 Risk Assessment – Contaminated Stormwater Discharges

8.4.1 Description of Contaminated Stormwater Discharges

The mobile crushing and screening unit will be used at various locations within the mining lease. There is the potential for stormwater to become contaminated with sediment and / or hydrocarbons during crushing and screening activities, which may then be discharged to land and/or adjacent waterways if not appropriately diverted, stored, treated and disposed of. Discharges of contaminated stormwater can impact soils and smother vegetation on land. Potential impacts to surface water bodies include increased turbidity and downstream sedimentation which may affect aquatic biota and ecosystems. Hydrocarbon contaminated stormwater may infiltrate groundwater, degrading the quality of the P1 PDWSA, the Bungaroo Creek Water Reserve. The Delegated Officer notes that impacts to surface water and groundwater have already been assessed under Part IV of the EP Act. As such, this assessment will consider potential impacts from discharges of contaminated stormwater to soils and vegetation.

8.4.2 Identification and general characterisation of emission

The majority of stormwater on the Premises will be generated during the wet season from October to April. Higher and more intense volumes will be generated should there be thunderstorms or cyclones experienced in the area, which are typical of the regional climate.

Crushing and screening activities generate fine particulate material which is likely to become mobilized in stormwater falling within the crushing and screening area.

Fuel storage and refueling operations may also result in stormwater becoming contaminated with hydrocarbons. Hydrocarbons are toxic in nature and can contain and other substances including heavy metals, Monocyclic Aromatic Hydrocarbons (BTEX) and Polycyclic Aromatic Compounds (PAH's).

8.4.3 Criteria for assessment

There is a range of land and groundwater quality criteria relevant including:

- *National Water Quality Management Strategy: Australian Drinking Water Guidelines 6 (NHMRC & NRMMC 2011)* provides drinking water quality criteria;
- *Australian Water Quality Guidelines (ANZECC & ARMCANZ 2000)* provides fresh and marine water criteria; and
- *Assessment and Management of Contaminated Sites (DER 2014)* provides ecological and human health assessment levels for soil.

8.4.4 Applicant controls (from Application)

This assessment has reviewed the controls set out in Table 14 below.

Table 14: Applicant's/Licence Holder's proposed controls for Contaminated Stormwater Discharges

Controls for management of contaminated stormwater	
Engineering	• Site surfaces will be shaped to allow for natural drainage and to avoid pooling or ponding on site; • Drainage from the site will be managed to prevent movement of sediment from erosion into the surrounding environment; • All runoff water from disturbed areas will be collected in retention bunds, sufficient to accommodate the maximum recorded rainfall intensity over a 24-hour period; and • Retention bunds will be constructed to allow adequate retention time to reduce suspended sediment load prior to discharge; and • Stockpiles, if required, will be stabilised to prevent erosion from wind or water
Management Controls	• Spill response procedures will be prepared and implemented to ensure spill containment measures are in place and available for clean-up, if required; • Storage capacity of retention bunds will be maintained through routine cleaning; • Minimise exposed soil working surfaces or protect them from stormwater erosion; and • Crushed material is stockpiled away from drainage paths and covered to prevent erosion.

8.4.5 Consequence

The Delegated Officer has considered the infrastructure controls in place, the nature of the mobile operations and the distance to the nearest sensitive receptors and has determined that the impact of discharges to land and groundwater could cause mid level on-site impacts. Therefore, the Delegated Officer considers the consequence to be **moderate**.

8.4.6 Likelihood of Risk Event

The Delegated Officer considers that contaminated stormwater discharges will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of contaminated stormwater discharge to be **unlikely**.

8.4.7 Overall rating of Contaminated Stormwater Discharges

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 11) and determined that the overall rating for the risk of contaminated stormwater discharge is **medium**.

8.5 Risk Assessment – Spills or leaks of hydrocarbons

8.5.1 Description of spills or leaks of hydrocarbons

Unplanned spills or leaks to land may occur as a result of accident, emergency or malfunction (abnormal operating conditions) associated with hydrocarbon storage infrastructure used on the Premises to support crushing and screening operations. This may contaminate soils and impact vegetation in the vicinity of the mobile plant.

8.5.2 Identification and general characterisation of emission

Hydrocarbons are toxic in nature and can contain and other substances including heavy metals, Monocyclic Aromatic Hydrocarbons (BTEX) and Polycyclic Aromatic Compounds (PAH's).

8.5.3 Criteria for assessment

There is a range of land and groundwater quality criteria relevant including:

- *National Water Quality Management Strategy: Australian Drinking Water Guidelines 6 (NHMRC & NRMMC 2011)* provides drinking water quality criteria;
- *Australian Water Quality Guidelines (ANZECC & ARMCANZ 2000)* provides fresh and marine water criteria; and
- *Assessment and Management of Contaminated Sites (DER 2014)* provides ecological and human health assessment levels for soil.

8.5.4 Applicant controls

This assessment has reviewed the controls set out in Table 15 below.

Table 15: Applicant's proposed controls for spills or leaks of hydrocarbons

Controls for management of spills / leaks of hydrocarbons	
Engineering controls	The design and construction of tanks, pipes and bunding will comply with all relevant regulations under the *Dangerous Goods Act 2004 (WA)* to prevent and/or manage spills. Hydrocarbons and chemicals will be stored in self-bunded tanks or within bunded areas. The bund will be constructed in an impervious material to comply with Australian Standard (AS) 1940 – 2004 '*The Storage and Handling of Flammable and Combustible Liquids'* with a minimum retention capacity of 110%.
Management controls	The following measures are proposed to be implemented to manage and mitigate potential issues associated with hydrocarbon and chemicals handling during operation of the C&SP: • Hydrocarbons will be segregated and stored separately from other materials and chemicals on the premises; • Bunded areas will be regularly maintained by inspecting the integrity of the bund, regularly cleaning out of the bund and checking that any valves are sealed and kept in the closed position;

	• Vehicles will be refuelled by a mobile fuel truck utilising drip trays; • The diesel fuel will be pumped and not gravity fed into vehicles/generators and the pump will be installed with a shut off device, so that the pump can be shut off in case of an emergency. The shut off device will be easily accessible and clearly identified; • The C&SP area will be equipped with spill kits and equipment that will be regularly monitored and maintained. The kit will include sufficient quantities absorbent materials, equipment for recovering spilled materials and containers for storing recovered materials; • In the event of a spill or leak, it will be reported immediately to the Site Manager and the area around the spill will be isolated and cleaned up using spill response equipment; • The waste from the spill will be stored separately and isolated, until collected and a licensed contractor for disposal to an authorized facility; and • Where necessary, validation sampling will be undertaken to verify that all contaminated soil has been removed.

8.5.5 Consequence

If spills or leaks of hydrocarbons occur, then the Delegated Officer has determined that contamination of soils, surface water and groundwater could cause mid level on-site impacts Therefore, the Delegated Officer considers the consequence of spills or leaks of hydrocarbons to be **moderate**.

8.5.6 Likelihood of Risk Event

The Delegated Officer has determined that the likelihood of spills or leaks of hydrocarbons occurring will probably not occur in most circumstances. Therefore, the Delegated Officer considers spills or leaks of hydrocarbons on the premises to be **unlikely.**

8.5.7 Overall rating of spills or leaks of hydrocarbons

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 11) and determined that the overall rating for the risk of spills or leaks of hydrocarbons is **medium.**

8.6 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 16 below. Controls are described further in section 9.

Table 16: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor** **(Impact)**			
1	Discharge to land and / or water from contaminated stormwater	Contaminated stormwater	Path of stormwater: Direct discharge, infiltration causing contamination of soils, surface water bodies. Impacts to vegetation	Engineering (drainage design, sedimentation basins); and management procedures (visual monitoring, regular checks).	Medium consequence Unlikely **Medium risk**	Acceptable subject to proponent controls conditioned / outcomes based controls
2	Discharge to land and / or water from spills / leaks of hydrocarbons	Hydrocarbon storage facilities and refuelling procedures	Direct discharge to soils, seepage to groundwater causing contamination of soils, surface water bodies. Impacts to vegetation.	Engineering (bunding, lining, drip trays); and management procedures (visual monitoring, regular checks).	Medium consequence Unlikely **Medium risk**	Acceptable subject to proponent controls conditioned / outcomes based controls

9. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 17. The risks are set out in the assessment in section 8 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the Applicant. The conditions of the Licence will be set to give effect to the determined regulatory controls.

Table 17: Summary of regulatory controls to be applied

		Controls **(references are to sections below, setting out details of controls)**
		9.1.1 and 9.1.2 **Infrastructure and equipment**
Risk Items (see risk analysis in section 8)	**1. Contaminated stormwater discharges**	●
	2. Spills / leaks of hydrocarbons	●

9.1 Licence controls

9.1.1 Stormwater infrastructure and equipment

The following environmental controls, infrastructure and equipment should be maintained and operated onsite to ensure appropriate management on stormwater on the Premises:

Table 18: Infrastructure requirements for management of contaminated stormwater

Infrastructure	**Requirements (Design and Construction)**
Stormwater retention / storage infrastructure	• To be constructed at each location within the Premises where mobile C&SP is being operated; • Water diversion bunds or levees will be established around processing and storage areas to prevent the cross-contamination of clean water; • All runoff water from disturbed areas shall be collected in stormwater retention bunds, sufficient to accommodate the maximum recorded rainfall intensity over a 24-hour period; and • Stormwater retention bunds shall be constructed to allow adequate retention time to reduce suspended sediment load prior to discharge.

Note: These requirements are derived from construction and design specifications in the original licence application (Bungaroo 2017). The Delegated Officer notes the Applicant is required to implement a Water Quality Monitoring and Management Plan in accordance with condition 6.2 of MS 960, which will require monitoring of surface water and groundwater quality parameters against the *Australian Drinking Water Guidelines*. In accordance with the

Guidance Statement: Setting Conditions (DWER 2015) controls to be implemented on the category 5 operating licence will not duplicate regulatory requirements of MS 960. Therefore, water quality monitoring will not be required under the Part V EP Act Licence.

Grounds: In accordance with DWER's *Guidance Statement: Risk Assessments* (DWER 2016b) the Licence Holder's controls in relation to management of contaminated stormwater will be conditioned as they lower the assessed likelihood of the risk event.

9.1.2 Spill infrastructure and equipment

The following environmental controls, infrastructure and equipment should be maintained and operated onsite for spill management:

Table 19: Infrastructure requirements for management of hydrocarbon spills / leaks

Infrastructure	Requirements (Design and Construction)
Hydrocarbon storage facilities	Shall comply with Australian Standard (AS) 1940 – 2004 '*The Storage and Handling of Flammable and Combustible Liquids'*
Spill kits	To include sufficient quantities of absorbent materials, equipment for recovering spilled materials and containers for storing recovered materials

Note: The above requirements are derived from Licence Holder controls specified in the original Licence Application (Bungaroo 2017).

Grounds: In accordance with the *Guidance Statement: Risk Assessments* (DWER 2016b) the Licence Holder's controls in relation to management of hydrocarbons will be conditioned as they lower the assessed likelihood of the risk event.

10. Determination of Licence conditions

The conditions in the issued Licence have been determined in accordance with the *Guidance Statement: Setting Conditions* (DWER 2015).

The *Guidance Statement: Licence Duration* (DWER 2016c) has been applied and the issued Licence expires in 16 years from date of issue. The expiry date of the Licence has been set at not later than 28 October 2033 to coincide with the expiry date of Mining Lease M47/1464.

Table 20 provides a summary of the conditions to be applied to this Licence.

Table 20: Summary of conditions to be applied

Condition Ref	Grounds
Authorised Emissions Condition 1	This condition is a valid, risk-based condition to ensure appropriate linkage between the licence and the EP Act.
Infrastructure and Equipment Condition 2	This condition is valid, risk-based and contains appropriate controls.
Record Keeping Conditions 3 to 6	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the licence under the EP Act.

11. Applicant's comments

The Applicant was provided with the draft Decision Report and draft Licence on 21 September 2017. The Applicant provided comments on 29 September 2017 which are summarised, along with DWER's response, in Appendix 2.

12. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Issued Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Alana Kidd

MANAGER LICENSING (RESOURCES NORTH)

Delegated Officer

under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Bungaroo South Pty Ltd. Application for Licence. 14 June 2017	Bungaroo 2017	DWER Records A1450735
2.	Bureau of Meteorology, August 2017, *Climate statistics for Australian locations – Pannawonica*	BoM 2017	Accessed at www.bom.gov.au
3.	Works Approval W5699/2014/1	W5699/2014/1	Accessed at www.dwer.wa.gov.au
4.	Ministerial Statement 960	MS 914	Accessed at www.epa.wa.gov.au/
5.	DWER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DWER 2015	Accessed at www.dwer.wa.gov.au
6.	WER, August 2016. *Guidance Statement: Environmental Siting.* Department of Environment Regulation, Perth.	DWER 2016a	
7.	DWER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DWER 2016b	
8.	DWER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	DWER 2016c	
9.	DWER, December 2014. *Guideline: Assessment and Management of Contaminated Sites. Contaminated Sites Guidelines.* Department of Environment Regulation, Perth	WDER 2014	
10.	*National Water Quality Management Strategy: Australian Drinking Water Guidelines 6.* National Health and Medical Research Council & Natural Resource Management Ministerial Council 2011 (Updated November 2016)	NHMRC & NRMMC 2011	Accessed at: https://www.nhmrc.gov.au/guidelines-publications/eh52
11.	*National Water Quality Management Strategy: Paper No. 4. Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ 2000)	ANZECC & ARMCANZ 2000	Accessed at http://www.agriculture.gov.au/water/quality/nwqms/nwqms-australian-guidelines-water-quality-monitoring-reporting
12.	Department of Water, August 2016. Groundwater assessment of the north-west Hamersley Range	DoW 2016	Accessed at http://www.water.wa.gov.au/__data/assets/pdf_file/0006/8718/HG62_Aug_2016.pdf
13.	Department of Health, 2010. *Health Risk Assessment (Scoping) Guidelines.*	DoH 2010	Accessed at: http://ehia.curtin.edu.au/local/docs/HEALTHRISKSCOPINGINEIA.pdf

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of Applicant comment	DWER response
Comment relates to Schedule 2 (Table 5) of the Licence and Table 4 of the Decision Report	Applicant advised that there will also be an additional 10,000L self-bunded diesel tank utilised on the premises during the mobile crushing and screening operations and requested this be included in relevant sections of the Licence and Decision Report.	The inclusion of an additional 10,000L diesel tank does not materially alter the risk assessment of operations at the Premises. Licence condition 2 specifies infrastructure and equipment controls during operations, specifically requiring hydrocarbon storage facilities to comply with Australian Standard (AS) 1940 – 2004 'The Storage and Handling of Flammable and Combustible Liquids. The Licence and Decision Report was therefore updated to include the additional diesel tank.