NORTHERN STAR
RESOURCES LTD

Works Approval Application
Attachment 3B

Proposed Activities

Northern Star (Carosue Dam)

Kurnalpi - Northern Operations

June 2025

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1 Introduction

Northern Star Resources Ltd (Northern Star) proposes to develop the Kurnalpi Gold Project (the Project) located approximately 75 km northeast of Kalgoorlie in the Eastern Goldfields region of Western Australia (Figure 1, Attachment 2). The Kurnalpi Project is an open pit gold mining operation that will act as a satellite operation to Northern Star's Carouse Dam Operations located approximately 40 km north east of the Kurnalpi Project.

The site can be accessed by road via Yarri Road and the Kurnalpi Pinjin Rd (Figure 1, Attachment 2). The Project hosts the historic Kurnalpi Mining Centre, which was discovered in 1894 and was renowned for its alluvial and deep lead gold with prospectors working shallow deposits for 'alluvial' gold with some success. Since 1989, the Kurnalpi area has been subject to modern exploration from multiple company owners, with extensive exploration drilling defining six gold deposits: Brilliant, Sparkle, Dazzle, Scottish Lass, Halfway Hill, and Discovery Hill.

1.1 Approval History

No referrals under Part IV of the *Environmental Protection Act 1986* (EP Act) or the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) have been made for the Project; the project is unlikely to result in significant impacts to the environment and can be managed under Part V of the EP Act and the *Mining Act 1978* (Mining Act).

This Works Approval Application has been submitted in conjunction with a Native Vegetation Clearing Permit (CPS 10989/1), Mining Proposal and Mine Closure Plan (Reg ID 500546).

1.2 Purpose

The Government of Western Australia's Department of Water and Environmental Regulation (DWER) regulates industrial emissions and discharges to the environment through a works approval and licensing process, under Part V of the EP Act. Industrial premises with potential to cause emissions and discharges to air, land or water are known as prescribed premises and trigger regulation under the EP Act. Prescribed premises categories are outlined in Schedule 1 of the *Environmental Protection Regulations, 1987*.

This Works Approval application is submitted to DWER to obtain approval for specific infrastructure and activities proposed for the Project as classified as Prescribed Premises Categories under Schedule 1 of the EP Act Regulations. This application, therefore, specifically seeks approval for the construction of the following:

- Mobile crushing and screening plant - Processing of or beneficiation of metallic or non-metallic ore; 50,000 tonnes or more per year (Category 5).
- Mobile crushing and screening plant - Screening, etc. of material, 50,000 tonnes or more per year (Category 12).
- Landfill Facility - Class I Inert Landfill - 500 tonnes or more per year (Category 63) and Class II putrescible landfill - 20 tonnes or more per year (Category 64)
- Mine Dewatering (Category 6) – 50,000 tonnes or more of water is extracted and discharged to the environment to allow mining of ore.

Although hydrocarbons and other chemicals will be stored on site and a wastewater system will be installed for the accommodation village, the small scale of the Project does not trigger the minimum threshold limits for the Schedule 1 categories; Category 73: Bulk chemical storage and Category 85: Sewage facility.

Information presented in this document aims to assist DWER in assessing the adequacy of proposed pollution prevention and control measures to ensure adverse environmental impacts are prevented or minimised to levels where appropriate environmental standards can be complied with.

1.3 Project Summary

Northern Star is proposing to develop the Project as an open pit mining, crushing, and trucking operation, with stockpiled ore transported off site for processing. It is proposed the Project will include:

- Development of two open pit mines, extending below the water table.
- Three Run-of-Mine (ROM) pads and ore storage areas.
- Two Waste Rock Dumps (North and South WRD).
- Two Saline Water Dams (Turkey's Nest North and South).
- Mobile crushing, screening plant
- Other associated mining infrastructure:
    - Landfills
    - Mine haul roads, access roads and tracks.
    - Topsoil/subsoil stockpiles.
    - Dewatering infrastructure (including pipelines to Turkey Nests).
    - Surface water management infrastructure.
    - Laydown and hardstand areas.
    - Workshops.
    - Fuel storage and dispending facilities.
    - Office buildings and ablutions
    - Explosives Magazine.
    - Diesel generators.
    - Communications
    - Accommodation Village

An indicative site plan is provided in Figure 1.

424,000
426,000
428,000
6,626,000
6,624,000
6,622,000
N
Haul Road
Flood Protection Bund
Magazine
Topsoil Stockpile
Laydown, Offices, Workshop
Topsoil Stockpile
Topsoil Stockpile
Topsoil Stockpile
Topsoil Stockpile
ROM Pad / MOP North
Topsoil Stockpile
Turkeys Nest 1 (North)
Camp
Flood Protection Bund
Brilliant Pit
WRD North
ROM Pad / MOP South
Diversion channel
ROM Pad / MOP Central
Turkeys Nest 2 (South)
Dazzle Pit
WRD South
Topsoil Stockpile
Kumalpi - Pinjin Rd
Laydown, Offices, Workshop
M 28/374
M 28/84
M 28/76
M 28/79
M 28/92
M 28/87
M 28/375
M 28/372
Garpsue Dam Access Rd
Haul Road
Kumalpi - Pinjin Rd
0 2.5 5 km

Legend

- Project Tenements
- Disturbance Envelope

Indicative Site Layout

- Key
- Support
- Local Road

Scale: 1: 20,000
Original Size: A3
Aerial Imagery: Kumalpi Nov 2024
Grid: GDA2020 / MGA zone 51 (EPSG:7851)
0 0.5 1 km

Northern Star Resources Limited

Figure 1

Disturbance Envelope and Site Plan

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MBS ENVIRONMENTAL

\\MBSSVR\working\Northern Star\Kumalpi\Approvals\Mining Proposal\GIS\NorthernStar_Kumalpi_MP_2025.qgz 24/02/2025 F03 Disturbance Envelope and Site Plan

1.4 Tenure

The Project comprises seven Mining Lease and one Miscellaneous Licence as shown in Table 1 and Figure 2 of Attachment 2.

Table 1: Kurnalpi Project Tenements

Tenement	Area (ha)	Grant	Expiry
M28/7	16.27	14/06/1983	21/06/2025*
M28/374	404.55	13/11/2012	12/11/2033
M28/375	286.15	13/11/2012	12/11/2033
M28/70	5.78	18/10/1989	19/10/2031
M28/76	10.62	19/02/1991	18/02/2033
M28/84	103.30	09/08/1992	11/08/2034
M28/92	123.20	01/06/1994	02/06/2036
L28/72	497.74	03/03/2022	02/03/2043

*Northern Star has lodged a 21 year renewal.

1.5 Licensee and Occupier of Premises

The Project proponent is Northern Star (Carosue Dam) Pty Ltd. All tenements associated with the Project are held by Northern Star (Table 1). The proponent and key contact details are shown in Table 2.

Table 2: Proponent and Key Contact Details

Proponent	
Name	Northern Star (Carosue Dam) Pty Ltd
Address	Level 4/500 Hay St, Subiaco WA 6008
ABN/ACN	14 116 649 122
Key Contact	
Name	[redacted]
Company	Northern Star Resources Ltd
Position	Principal Environmental Advisor
Address	Level 4/500 Hay St, Subiaco WA 6008
Phone	[redacted]
Email	

1.6 Prescribed Premises Categories

This Works Approval Application (WAA) seeks approval for the construction of the Schedule 1 Prescribed Premises Categories, shown in Table 3, as applicable to the Kurnalpi Project. Locations of proposed prescribed activities are shown in the figures provided in Attachment 2.

Table 3: Prescribed Premises Categories

Category Number	Description of Category	Production or Design Capacity Threshold	Relevant Project Infrastructure
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. b) Tailings from metallic or non-metallic ore are reprocessed. c) Tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	50,000 tonnes or more per year	Mobile crushing and screening plant (mobile crusher)
12	Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	50 000 tonnes or more per year	Mobile crushing and screening plant (mobile crusher)
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	Turkey Nests Mine Pits
63	Class I inert landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996, is accepted for burial.	500 tonnes or more per year	Landfill facility
64	Class II or III putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996, is accepted for burial.	20 tonnes or more per year	

1.7 Timeline for Development

Subject to all regulatory approvals for the Project being received, Northern Star anticipates construction works will commence in Q4 2025. Operation of the Kurnalpi Project is scheduled to commence as soon as construction is complete. The Project is expected to have a life of mine of 34 months.

2 Existing Environment

A description of the existing environment at the Project site is provided in Attachment 7 of the WAA and is not repeated in this Attachment. Attachment 7 details the siting and location of the Project, the environmentally sensitive receptors, and the environmental siting context at a regional level.

3 Prescribed Premise Categories

3.1 Category 6: Mine Dewatering

The key characteristics of the Category 6 prescribed premise are presented in Table 4.

Table 4: Key Characteristics for the Mine Dewatering

Operating hours	Continuous (24 hours per day, 7 days a week, 365 days a year).
Extraction Location/s	Brilliant Pit, Dazzle Pit.
Emission Location/s	Open Pits, Turkey Nest, Haul Roads (via water carts).
Dewatering Infrastructure	Pipelines, In-pit sumps, turkey's nests, storage tanks.
Production or Design Capacity	320,000 tonnes per year.

The Kurnalpi Project will require the extraction and discharge of water for dewatering purposes for the duration of mine life. Dewatering infrastructure includes in-pit sumps, pipelines and containment infrastructure for the storage of dust suppression water (Figure 6, Attachment 2). Excess dewater will be discharged to emission locations and containment infrastructure. Turkey's nests will be constructed for the storage of mine dewater to be used for dust suppression and mining activities.

Two double turkey's nests (water dam) will be constructed for to be used for dust suppression and mining operations. Each turkey's nest will be approximately 70m by 150m with a capacity of approximately 10,000 m^3. Approximately 300 mm of freeboard will be maintained in the turkey's nests i.e. about 8,700 m^3 of storage capacity and about 1,300 m^3 of freeboard. The expected cut depth for the Turkey's nests will be about 3 m, however the level may vary to reduce fill material required. All turkeys nest will be HDPE lined. A stand-pipe and pipeline/pumping infrastructure will also be installed at each turkeys nest.

This WAA is seeking approval to allow for the prescribed activity to extract and discharge mine dewater for the purpose of mining activity at the Kurnalpi Project. It is expected all the mine dewater will be used in dust suppression, however approval is being sought to store mine dewater within the mine pits as a contingency measure.

A hydrogeological assessment of the Kurnalpi project was conducted by Pennington Scott (2025) (See Attachment 8). Pennington Scott (2025) predicted groundwater inflows would be approximately 6.3 L/s, and sufficient to supply the approximately 300,000 kL/year required for dust suppression. Any excess mine dewater will be stored within the Turkey's Nests and mine pits.

Mine dewatering will be managed in accordance with groundwater licence (GWL 151848) and consistent with current Northern Star management practices. Northern Star has applied to amend GWL 151848 to include the additional dewatering proposed.

3.2 Category 5 & 12: Mobile Crushing and Screening Plant

The key characteristics of the Category 5 & 12 prescribed premises are presented in Table 5 .

Table 5: Key Characteristics of the Mobile Crushing and Screening Plant

Operating hours	Continuous (24 hours per day, 7 days a week, 365 days a year).
Flow sheet	Primary and secondary crushing and screening.
Type of mobile crusher	The plants will comprise of a jaw crusher, cone crusher with pre-screen and an additional twin deck incline screen or similar.
Ore processing rate	Maximum throughput 400,000 tpa.
Ore production rate	2.6 Mt over a 34 month mine life.
Supporting equipment	Front Loader or similar

The Project is expected to produce approximately 34.2 Mt of waste rock and 2.6 Mt of ore. Ore from the pits will be loaded into haul trucks via excavators and delivered to the ROMs where it will be reclaimed from the ROM stockpiles and transported to the adjacent crushing circuit. Ore will feed into a mobile crushing and screening plant before being delivered to interim stockpile areas ready for transport to CDO processing facility. Waste rock will also be crushed and screened for use in mining operations, such as for construction materials used in civil works.

Crushing and screening is expected to take place on a campaign basis using mobile crushing and screening plant. An example of the proposed mobile crushing and screening operation is presented in Plate 1. The location of the proposed mobile crushing and screening plant is shown in Figure 4 of Attachment 2.

3.2.1 ROM Pad and Stockpiles

The Run-of-Mine (ROM) pads and stockpiles will cover an area of approximately 104 ha and have a capacity to store up to 4.5 Mt of ore. The ROM will be sized and built to simplify the loading requirements. Surface water would be directed away from the ROM stockpiles to drain into constructed diversions across the project tenement. Dust would be minimised through the use of a water cart to pre-condition the ROM materials at the ROM pad and to control the dust in the crushing and screening plant.

3.2.2 Crushing and Screening

Ore collected from ROM stockpiles will be fed into a three-stage mobile processing plant set on a compacted earthen hardstand. The plant will comprise of a jaw crusher, cone crusher with pre-screen and an additional twin deck incline screen or similar. The stockpiled material will be loaded onto the crushing and screening plant with a front loader and the same or similar vehicle will place the crushed material into interim stockpiles. The crushed interim stockpiled ore will then be transported to the Carosue Dam Processing plant approximately 45 km southwest of the project. The operation of the crushing and screening plant is not anticipated to produce any waste material.

Due to the mobile operation and location of the crushing and screening, there is no fixed or continuous water supply. Dust generated from this activity would be minimised through the use of a water cart to carry out dust suppression on the stockpiled material prior to being fed into the crusher. Operational dust management will be managed by the contractor, including the implementation of a Trigger Action Response Plan (TARP).

Plate 1: Example of Proposed Crushing and Screening Infrastructure

3.2.3 Product Stockpiles

Ore will be collected from the interim ore stockpiles and transported to the CDO processing plant for treatment.

3.2.4 Installation and Set Up

No permanent crushing and screening plant will be established on the premises. Mobile plant will be mobilised to site on an as needs basis. Different contractors and plant may be used, but is expected to be like plant described above.

Environmental controls will be established for the operation of crushing and screening e.g. water trucks will be made available for dust suppression at the ROM. Once these controls are in place an inspection of the premise will take place and a compliance report will be submitted to DWER, the premise will then enter time limited operations.

Given the nature of the plant to be used, being mobile plant, there will be no construction requirements for installation of the plant. However, during operations the equipment will be inspected and tested to ensure it is operating as designed.

3.3 Category 63 & 64: Landfill

An onsite landfill will be required for disposal of putrescible and inert, non-recyclable wastes. Domestic (putrescible and non-putrescible) and non-recyclable waste produced at the accommodation village, processing plant, workshops, offices, kitchens would be disposed of into the facilities. Additionally, miscellaneous construction and demolition wastes may also be disposed of to the landfills.

The proposed landfill sites would be constructed and operated according to the Environmental Protection (Rural Landfill) Regulations 2002 (WA).

Key characteristics of the proposed landfill are detailed in Table 6

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Table 6: Key Characteristics for the Landfill

Classification	Class I and Class II.
Capacity (tonnes)	4,500.
Landfill Area (trenches)	20mx2mx2m.
Cover frequency (time)	Fortnightly (putrescible waste trenches).

3.3.1.1 Landfill Class

The proposed landfill has been determined to be a Class II facility under the *Landfill Waste Classification and Waste Definitions 1996* (as amended 2019) (DWER, 2019). This is defined as an unlined landfill designed to accept inert wastes for burial with the following waste types permitted for disposal:

- Clean Fill.
- Inert Waste Type 1 (non-hazardous, non-biodegradable (half-life greater than two years) wastes containing contaminant concentrations less than Class I landfill acceptance criteria but excluding paper and cardboard and materials that require treatment to render them inert (e.g. peat, acid sulfate soils).
- Uncontaminated fill.
- Putrescible wastes.
- Neutralised acid sulfate soil (where authorised under an Environmental Protection Act licence).
- Contaminated solid wastes meeting waste acceptance criteria specified for Class I landfills (where authorised under an Environmental Protection Act licence).
- Inert Waste Type 2 and Type 3 (where authorised under an Environmental Protection Act licence).
- Special Wastes Type 1, Type 2 and Type 3 (where authorised under an Environmental Protection Act licence).

3.3.1.2 Landfill Design

The landfill design will be developed using a moving, unlined trenches with maximum open excavations of approximately 20 m in length, 2 m in depth and 2 m in width. An egress ramp will be constructed at each end of the trench for personnel and fauna to enter and exit the excavation safely.

The landfill is sized to accommodate up to 4,500 tonnes of waste per annum. Stormwater drainage will be in the form of a diversion bund to divert runoff around the facility. Any rainfall which falls within the trench will be contained.

Putrescible waste is to be covered fortnightly with sufficient quantities of Inert Waste Type 1, clean fill or other appropriate cover material to prevent the spread of fire and harbouring of disease vectors.

Waste that is blown outside of the landfill will be returned to the tipping area at least once every month in accordance with Regulation 8 of the *Environmental Protection (Rural Landfill) Regulations 2002*.

4 Time Limited Operations

Due to the nature of the operations of the Project Northern Star proposes a standard Time Limited Operation period of 180 days be granted for the prescribed premises category nominated in Table 7.

No permanent crushing and screening plant will be established on the premises. Rather, mobile plant will be mobilised to site on an as needs basis. Different contractors and plant may be used, but the plant used is expected to be like the plant described above.

During construction, environmental controls will be established for the operation of crushing and screening e.g. water trucks will be mobilised to site and made available for dust suppression at the ROM as part of the mining fleet. Once these controls are in place an inspection of the premise will take place and a compliance report will be submitted to DWER, and the crushing and screening facility will enter time limited operations.

Following construction of the landfill facility a compliance report will be submitted for the facility, to demonstrate relevant environmental controls are in place in accordance with Environmental Protection (Rural Landfill) Regulations 2002. There will not be individual compliance reports for each trench.

Operations under Licence conditions would begin when the Licence is granted.

Table 7: Proposed Time Limited Operations for Prescribed Premises

Prescribed Premises Category	Infrastructure	Time Limited Operations Period (days)
5 & 12	Mobile crushing and screening plant	180
6	Mine Dewatering	180
63 & 64	Landfill	180

4.1 Compliance Reporting

Any non-compliances with the Works Approval would be reported in accordance with administrative conditions in the Works Approval.

5 Proposed Clearing Activities

Native Vegetation clearing is not proposed as part of the Works Approval, a Native Vegetation Clearing Permit application has been submitted to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) for the clearing of native vegetation required for the Project (CPS 10989/1).

As part of the clearing permit application Northern Star proposes to clear up to 580 ha of native vegetation within a Development Envelope of 1,442.2 ha which allows adequate space within the Development Envelope for proposed mining, siting of infrastructure, and associated activities.