NORTHERN STAR
RESOURCES LTD

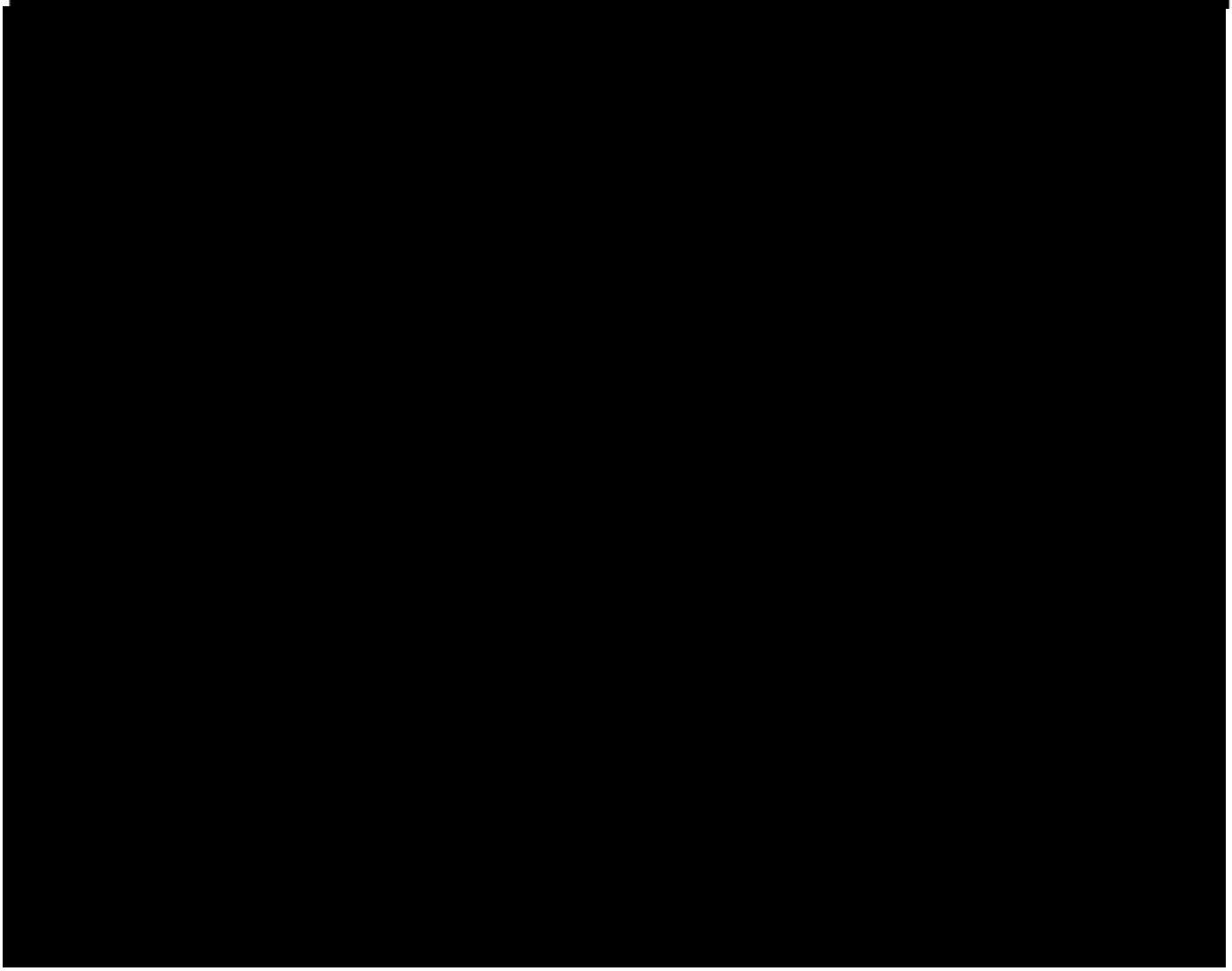
JUNDEE PASTE PLANT

WORKS APPROVAL APPLICATION

SUPPORTING ATTACHMENTS

Version	1
Date	16 April 2025
Premises	L6498/1995/11
Tenements	M 53/191, M 53/413, M 53/414
Tenement Holder	Northern Star Resources Ltd
Mining Centre	Jundee Operations

[redacted]



CONTENTS

LIST OF FIGURES

LIST OF TABLES

[redacted]

1 Proof of Occupier Status (Attachment 1A)

The proposed activities are located within Jundee Operations prescribed premises (L6498/1995/11). Occupier details are outlined in Table 1 1 below.

Table 1-1: Jundee Operations Tenements

Site Details		
Premises Name	Jundee Operations	
Premises	L6498/1995/11	
Tenement Details	Northern Star Resources Ltd	M 53/191
		M 53/413
		M 53/414
Proponent Details		
Company Name	Northern Star Resources Ltd	
ACN	092 832 892	
Address	[redacted]	
[redacted]	[redacted]	
Key Contact Representative	[redacted]	

2 Company Authorisation (Attachment 1C)

22 June 2022

Director General
Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace
Joondalup WA 6027

Dear Director General

LETTER OF AUTHORITY IN REGARD TO APPROVAL APPLICATIONS

Please be advised that individuals holding the following positions are authorised to sign each of the following approval applications on behalf of Northern Star Resources Ltd and its subsidiaries:

Position

- Site Senior Executive/General Manager – Carosue Dam Operations
- Site Senior Executive/General Manager – KCGM
- Site Senior Executive/General Manager – Kalgoorlie Operations
- Site Senior Executive/General Manager – Jundee Operations
- Site Senior Executive/General Manager – Thunderbox Operations
- Site Senior Executive/General Manager – Bronzewing Operations

Approval application

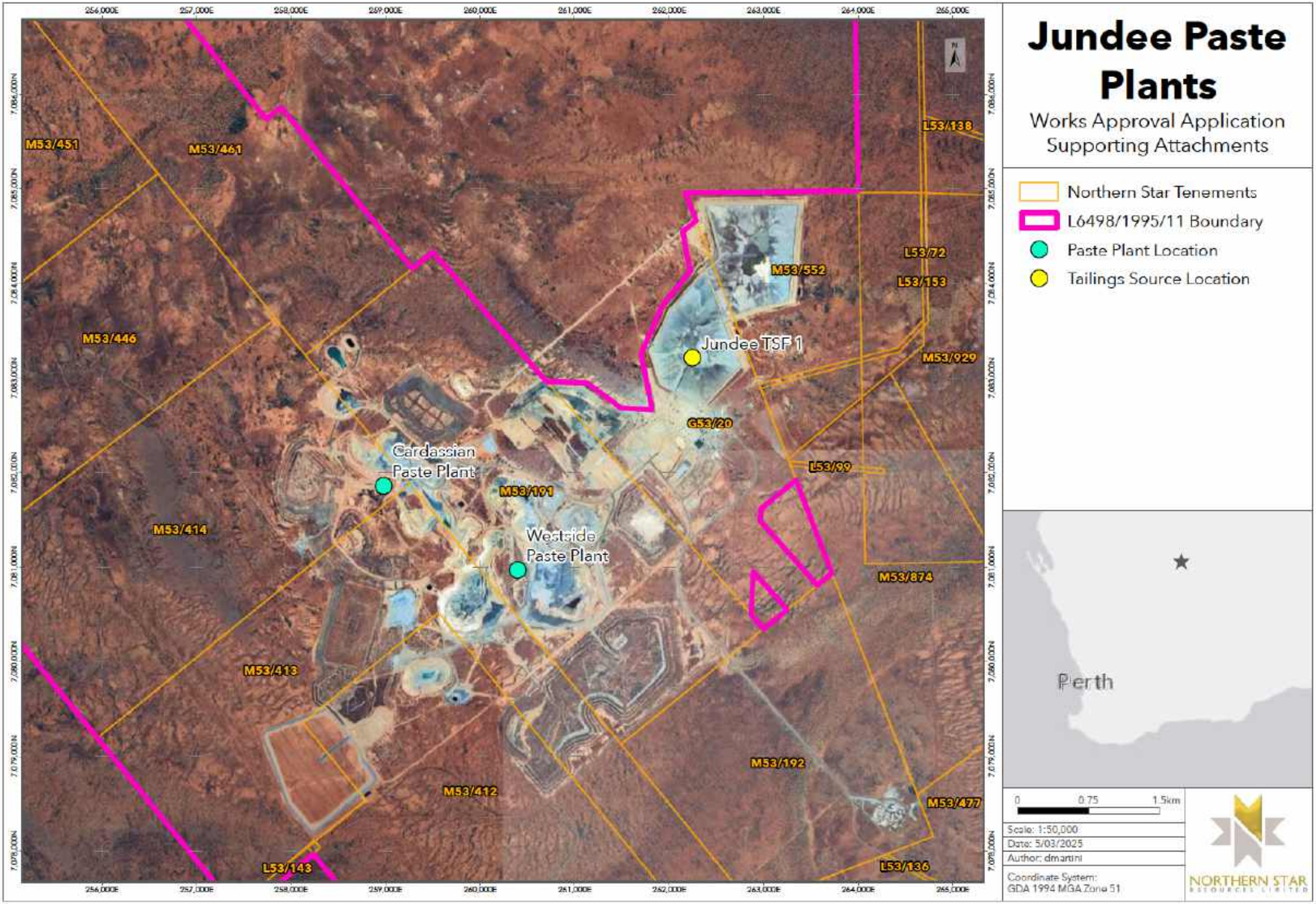
- Application for: Clearing Permit (Area Permit or Purpose Permit) / Amendment to a clearing permit / Surrender a clearing permit / Notificaton of change of land ownership
- Application form: Works Approval / Licence / Renewal / Amendment / Registration / Surrender works approval or licence / Transfer works approval or licence or Notify new occupier of registered premises
- Application for a water licence under section 26D of the *Rights in Water and Irrigation Act 1914*
- Application for a 5C licence to take groundwater
- Application for a section 11/17/21A permit to interfere with bed and banks
- Annual Audit Compliance Report
- Annual Environmental Report
- Annual and Triennial Groundwater Reviews

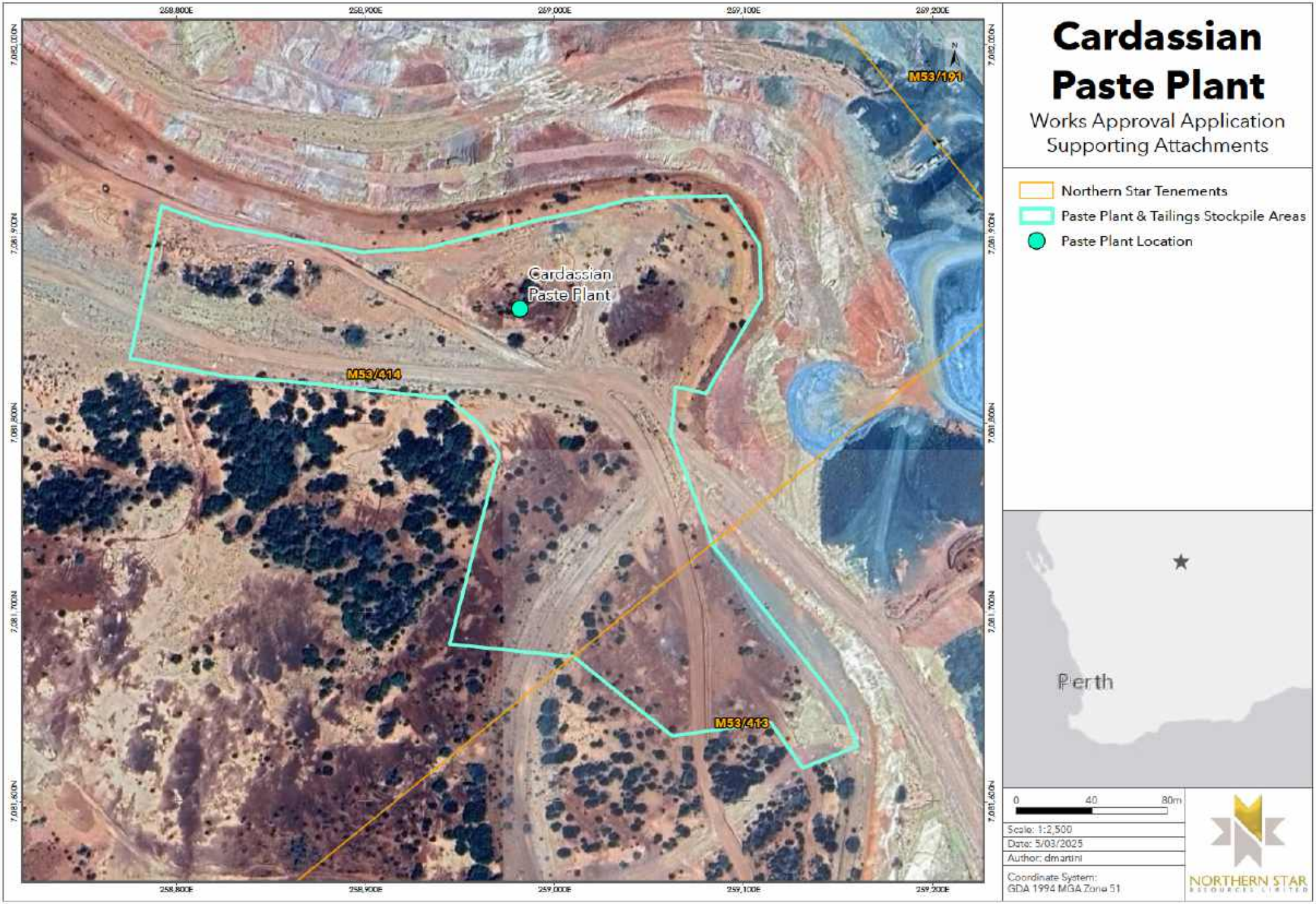
Executed by **Northern Star Resources Limited (ABN 43 092 832 892)** on its own behalf and on behalf of its wholly-owned subsidiaries, in accordance with section 127 of the *Corporations Act 2001* (Cth):

[redacted]

3 Premises Maps (Attachment 2)

The location of proposed activities within boundary of prescribed premises L6498/1995/11 are shown in Figure 1. The indicative paste plant and tailings stockpile boundaries for Cardassian and Westside paste plants are shown in Figure 2 and Figure 3 respectively.


256,000E
257,000E
258,000E
259,000E
260,000E
261,000E
262,000E
263,000E
264,000E
265,000E
7,086,000N
7,085,000N
7,084,000N
7,083,000N
7,082,000N
7,081,000N
7,080,000N
7,079,000N
7,078,000N
M53/451
M53/461
L53/138
L53/72
L53/153
M53/552
M53/446
Jundee TSF 1
M53/929
G53/20
Cardassian
Paste Plant
L53/99
M53/191
M53/414
Westside
Paste Plant
M53/874
M53/413
M53/192
M53/412
M53/477
L53/143
L53/136
Jundee Paste Plants
Works Approval Application
Supporting Attachments
Northern Star Tenements
L6498/1995/11 Boundary
Paste Plant Location
Tailings Source Location
Perth
0
0.75
1.5km
Scale: 1:50,000
Date: 5/03/2025
Author: dmartini
Coordinate System:
GDA 1994 MGA Zone 51
NORTHERN STAR
RESOURCES LIMITED



Cardassian Paste Plant

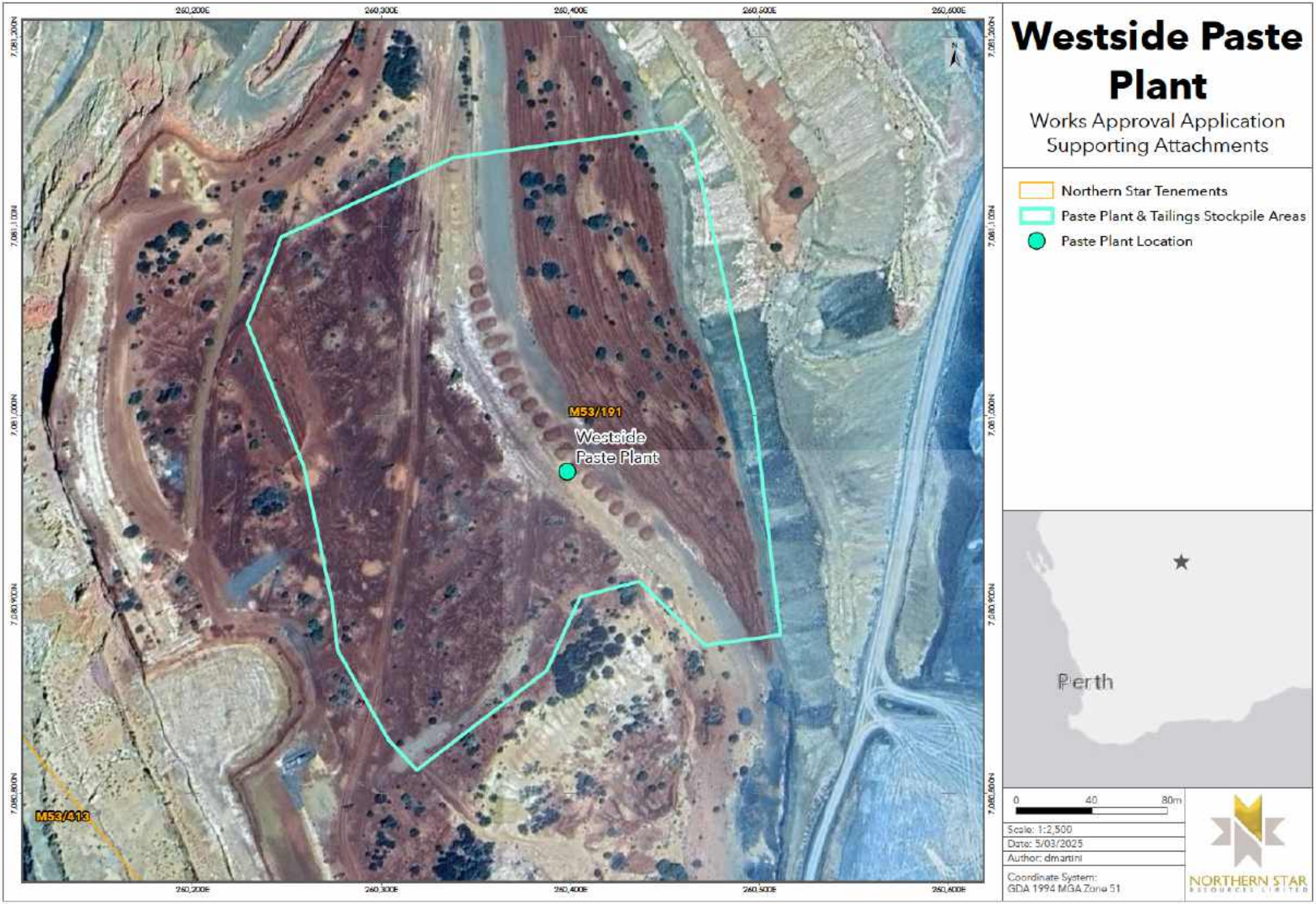
Works Approval Application
Supporting Attachments

- Northern Star Tenements
- Paste Plant & Tailings Stockpile Areas
- Paste Plant Location

0 40 80m

Scale: 1:2,500
Date: 5/03/2025
Author: dmartini
Coordinate System:
GDA 1994 MGA Zone 51

NORTHERN STAR
RESOURCES LIMITED



Westside Paste Plant

Works Approval Application
Supporting Attachments

- Northern Star Tenements
- Paste Plant & Tailings Stockpile Areas
- Paste Plant Location

0 40 80m

Scale: 1:2,500
Date: 5/03/2025
Author: dmartini
Coordinate System:
GDA 1994 MGA Zone 51

NORTHERN STAR
RESOURCES LIMITED

4 Environmental Commissioning Plan (Attachment 3A)

In accordance with the Guideline: Industry Regulation Guide to Licensing (DWER 2019) there is no environmental commissioning phase required to validate environmental performance relative to predicted performance. All proposed activities are low risk and controls under the works approval are considered effective to mitigate risks during time limited operations (TLO).

Basic environmental commissioning checks associated with construction activities are summarised in Table 4-1 below, demonstrating that these checks can be conducted in a short time frame during TLO.

Table 4-1: Basic Commissioning Checks

Infrastructure	Indicative Test Period	Environmental Checklist
Paste Plants	~2 weeks (or first rainfall event)	• Confirm no leaks or spills from water connections • Confirm surface water runoff is contained within plant / stockpile area boundary following rainfall • Confirm tailings stockpiles are not causing dust liftoff during high wind event
Saline Pipeline	~1 day	• Confirm no leaks or spills from pipeline • Confirm cutoff vales working to isolate lines

4.1 Time Limited Operations

A proposed period of 180 days is requested for each item of infrastructure below to allow for staggered construction and commissioning, and sufficient time to apply for a licence amendment:

- Cardassian paste plant and associated pipelines
- Westside paste plant and associated pipelines

5 Proposed Activities (Attachment 3B)

5.1 Proposal Overview

Northern Star propose to construct and operate a dry tailings paste plant at Jundee to generate paste fill for backfilling of underground voids (stopes). The proposed dry tailings paste plant is a prefabricated modular design and will be used at two different locations within Jundee referred to as Cardassian and Westside. The tentative program is to construct and operate the paste plant at Cardassian for 12 months, before relocating to Westside for 36 months, however this is subject to underground mine scheduling requirements.

Two categories as defined in Schedule 1 of the *Environmental Protection Regulations 1987* are sought in this Works Approval application as outlined in Table 5-1 below. Design capacity has been calculated assuming maximum throughput utilisation over 24 hours per day 365 days per year.

Table 5-1: Proposed Category Outputs

Schedule 1 Category	Proposed Infrastructure	Prescribed Trigger	Design Capacity	Proposed Output
Category 5: Processing or beneficiation of metallic or non-metallic ore (b) tailings from metallic or non-metallic ore are reprocessed	Dry paste plant and tailings stockpile areas	50 000 tonnes or more per year	1,400,000 tpa	720,000 tpa
Category 6: Mine dewatering	Saline pipelines for paste plant water supply	50,000 tonnes or more per year	401,500 tpa	200,750 tpa

5.2 Category 5 - Processing or Beneficiation of Metallic or Non-Metallic Ore

Paste will be generated from blending of reclaimed tailings, cement and water within a mixing tank, and will be fed directly underground via bore hole to open stopes. Paste fill enables for higher recovery of ore than open stope mining as pillars are not required for ground support and can be extracted, also enabling tailings to be reused for a beneficial purpose in a low risk environment.

Dry tailings will be reclaimed (excavated) from Jundee tailings storage facility (TSF) 1 and transported by trucks approximately 6 km to paste plant locations. Whilst tailings are considered dry, they contain sufficient residual moisture (approximately 15%) to prevent dusting during loading, unloading and transportation. Haulage will occur on existing access roads within Northern Star tenements, and tenement M 53/193 owned by external third party under existing access deed. No public roads will be accessed for any haulage of tailings.

Tailings will be unloaded in designated stockpile areas adjacent to paste plants which will be graded towards adjacent pits to capture any surface water runoff. The stockpile area will be constructed of a compacted clay layer over crushed aggregate to ensure separation between tailings and in-situ soils. Tailings will be stockpiled to a maximum height of 3 m in windrows. Tailings may be rehandled in the stockpile area to allow for further drying to reduce moisture content required to create paste.

5.2.1 Paste Plant Infrastructure

The proposed dry tailings paste plant is of a prefabricated modular design, enabling quick installation and relatively minimal commissioning requirements. A concrete pad will firstly be constructed to allow for modular infrastructure to be bolted into place. The maximum throughput is of the paste plant is 100 m^3/hour, but the estimated productivity is likely to average between 800 -1,000 m^3/day as it will not be operated continuously.

The paste plant has a simple configuration broadly comprised of the following items of infrastructure:

- **Hopper** - front end loader fed with a capacity of 10 m^3 with constant feed rate onto conveyor.
- **Conveyor** - rubber lined incline conveyor with discharge chute directly into mixer.
- **Cement silo** - 240 tonne silo fed via compressed air driven pneumatic transfer and fitted with dust filter and overfill protection.
- **Water tank** - 25,000 L water storage tank to contain mine dewater from saline water pipelines.
- **Mixer** - single shaft continuous mixer which blends tailings, cement and water into paste.
- **Bore hole** - bore hole located over concrete sump driven by two centrifugal pumps which transfers paste directly underground to open stopes.
- **Control system** - central control system with operator interface with appropriate fault messages and automated shut down processes

An indicative layout of the paste plant is shown below in Plate 1, which is an existing paste plant with the same configuration which will be utilised at Jundee.

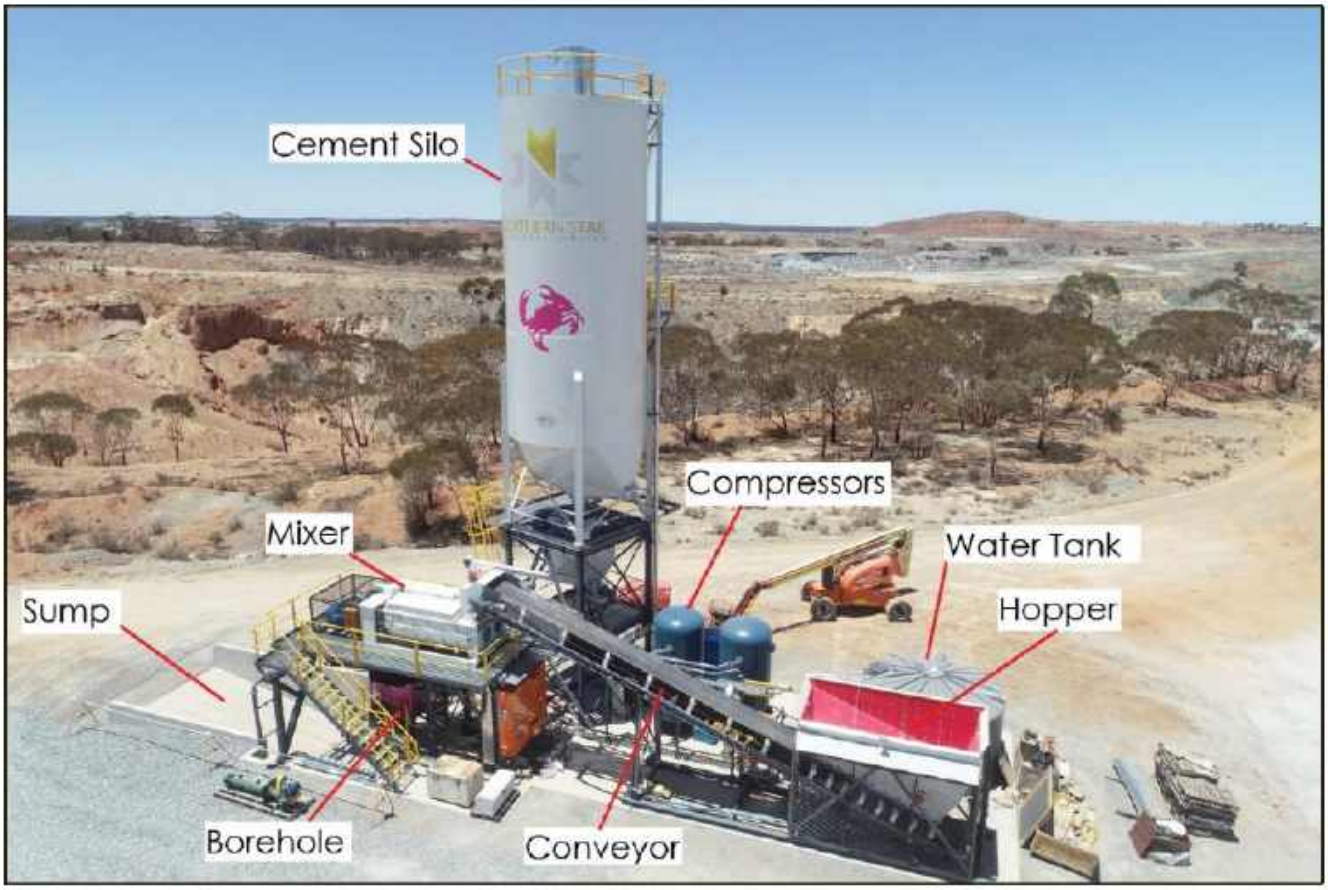


Plate 1: Paste Plant Indicative Layout

5.3 Category 6 – Mine dewatering

Water for blending paste will likely be sourced from Cook Pit, an existing mine dewater discharge point at Jundee. New pipelines will be constructed to provide water supply to both paste plant locations, which will tee into existing saline dewatering ring lines at Jundee. Pipelines will be 110 mm diameter high-density polyethylene and sited within existing disturbed areas adjacent to access roads. All pipelines will be constructed within v-drains of sufficient capacity to contain spills for 12-hour periods, and form part of the monitored network of saline pipelines operated at Jundee.

6 Other Approvals & Engagement (Attachment 5)

Northern Star is aware of its obligation to seek approvals and comply with requirements under various Legislation and Regulations in addition to securing this Works Approval. At the time of preparing this document environmental approvals applicable to this application has been summarised in Table 6-1 below.

Table 6-1: Environmental Approvals Summary

Legislation / Regulation	Environmental Aspect(s)	Approval Status
Aboriginal Heritage Act 1972	Aboriginal heritage sites	No Aboriginal heritage sites will be impacted – no Section 18 approval required.
Biodiversity Conservation Act 2016 (BC Act)	Threatened flora, fauna and ecological communities	Minimal clearing required - no Section 40 approval is required under BC Act.
Dangerous Goods Safety Act 2004	Storage of dangerous goods	No dangerous goods will be stored at the paste plant - diesel generators will be refuelled by mobile service trucks.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Matters of national environmental significance	No matters of national environmental significance applicable – no referral required under EPBC Act.
Environmental Protection Act 1986 (Part IV)	Matters of state environmental significance	No triggers for referral under Section 38 of the EP Act – no referral required.
Environmental Protection (Controlled Waste) Regulations 2004	Controlled waste transport	No tailings will be transported via public roads - not applicable.
Environmental Protection (Clearing of Native Vegetation) Regulations 2004	Native vegetation clearing	Minor amounts of clearing will be done under 10 ha per tenement exemption (Regulation 5, Item 20).
Environmental Protection (Noise) Regulations 1997 (Noise Regulations)	Social surroundings	No nearby sensitive receptors - Construction noise management plan not required.
Mining Act 1978	Biodiversity Water resources Land and soils Closure and rehabilitation	A revised Mining Proposal was recently approved by DEMIRS (REG ID 129034) including both paste plant locations.
Native Title Act 1993	Land access	All tenure has been granted and falls under an existing Land Use Agreement with the registered Native Title holder.
Rights in Water and Irrigation Act 1914 (RIWI Act)	Groundwater resources	Groundwater used for blending paste will be abstracted under existing licences at Jundee: • GWL 63514 • GWL 63515 • GWL 107143 (total entitlement 6,239,750 kL)

6.1 Stakeholder Engagement

Stakeholder engagement has been ongoing throughout the life of the project commencing with previous owners of Jundee. Northern Star has a dedicated Social Performance team to enhance stakeholder outcomes across the business. Northen Star's stakeholder engagement strategy is informed by the principles outlined below.

- **Communication**: Communication must be open, accessible, clearly defined, two-way and appropriate.
- **Transparency**: The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented.
- **Collaboration**: A co-operative and collaborative approach to seek mutually beneficial outcomes is considered key to effective engagement.
- **Inclusiveness**: Inclusiveness involves identifying and involving communities and stakeholders early and throughout the process, in an appropriate manner.
- **Integrity**: Community and stakeholder engagement should establish and foster mutual trust and respect

Key stakeholders to proposed activities and adopted engagement strategies for each party are summarised in Table 6-2 below.

Table 6-2: Stakeholder Engagement Strategy

Group	Key Stakeholder	Engagement	Timing
Native Title (Wiluna)	Tarlka Matuwa Piarku Aboriginal Corporation RNTBC	Provision of Work Program Notice of proposed activities.	Completed March 2025
Adjacent Landholders (M 53/193)	Mark Creasy	Haulage agreement over tenement.	Agreement in place to use tenement.
Pastoralist	Jundee Station	N/A - Station owned by Northern Star	N/A
State Government	DEMIRS	Submission of updated Mining Proposal including proposed activities.	Complete - approved.
	DWER	Submission of Works Approval application	This document

6.2 Stakeholder Engagement Register

Northern Star utilise INX InForm as a Stakeholder Engagement Register (SER). The purpose of this SER is to document consultation activities undertaken with all stakeholder groups and individuals, including any comments or concerns raised and follow up actions. The SER is a live database and will continue to document all consultation through the life of Jundee.

7 Emissions & Discharges (Attachment 6A)

Emissions and discharges and associated potential risk pathways and proposed controls during construction and TLO are summarised in Table 7-1 below. The proposed controls during TLO will be the same as during operations.

Table 7-1: Emissions & Discharges

Activity	Potential Emissions / Discharge	Potential Risk Pathways	Proposed Controls
Construction			
Construction of paste plant and pipeline	• Dust • Noise • Spills	• Operation of mobile plant (excavators, cranes etc.). • Operation of handheld tools (i.e. rattle gun). • Spills of hydrocarbons or chemicals used in construction.	• Limiting construction activities during periods of excessive winds. • Monitoring for spills and provision of spill kit equipment.
Time Limited Operations			
Operation of paste plant	• Contaminated runoff • Dust (tailings) • Noise • Paste spills	• Dust liftoff from tailings stockpiles, and during tipping into hopper. • Hydrocarbon spills or leaks from operation of diesel generator. • Stormwater runoff from tailings stockpiles enters adjacent vegetated areas.	• Tailings stockpile area graded towards pits. • Borehole located within concrete sump. • Visual inspections of tailings stockpile areas during high winds.
Transport of mine dewater via pipeline	• Noise • Hydrocarbon spills • Saline water spills	• Operation of pumps via diesel generator. • Pipeline leak or rupture releasing saline water.	• Visual pipeline inspections for integrity. • Pipeline sited within v-drain • Pumps sited within existing disturbed areas.

8 Siting & Location (Attachment 7)

Both paste plant locations are sited within an operational mining area within L6498/1995/11 prescribed premises boundary, adjacent to existing pits. The surrounding area is largely disturbed by mining activities and there are limited environmental or social values that could be impacted by proposed activities.

8.1 Sensitive Land Uses

The EPA defines sensitive land uses as "land uses considered to be potentially sensitive to emissions from industry and infrastructure include residential developments, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, childcare facilities, shopping centres, playgrounds, and some public buildings".

In accordance with this definition the nearest sensitive land use to the proposed activities is the accommodation village located at Jundee approximately 4 km southeast from Westside paste plant. Separation distances between industrial and sensitive land uses are outlined by the EPA (2005) and summarised in Table 8-1 below, demonstrating that the minimum separation distances are well exceeded.

Table 8-1: Separation Distances

Activity	Description	Minimum Separation Distance	Separation Distance
Concrete batching plant*	Concrete is made (batched)	300 – 500 m	4,000 m

*most similar activity to paste plant and essentially the same process

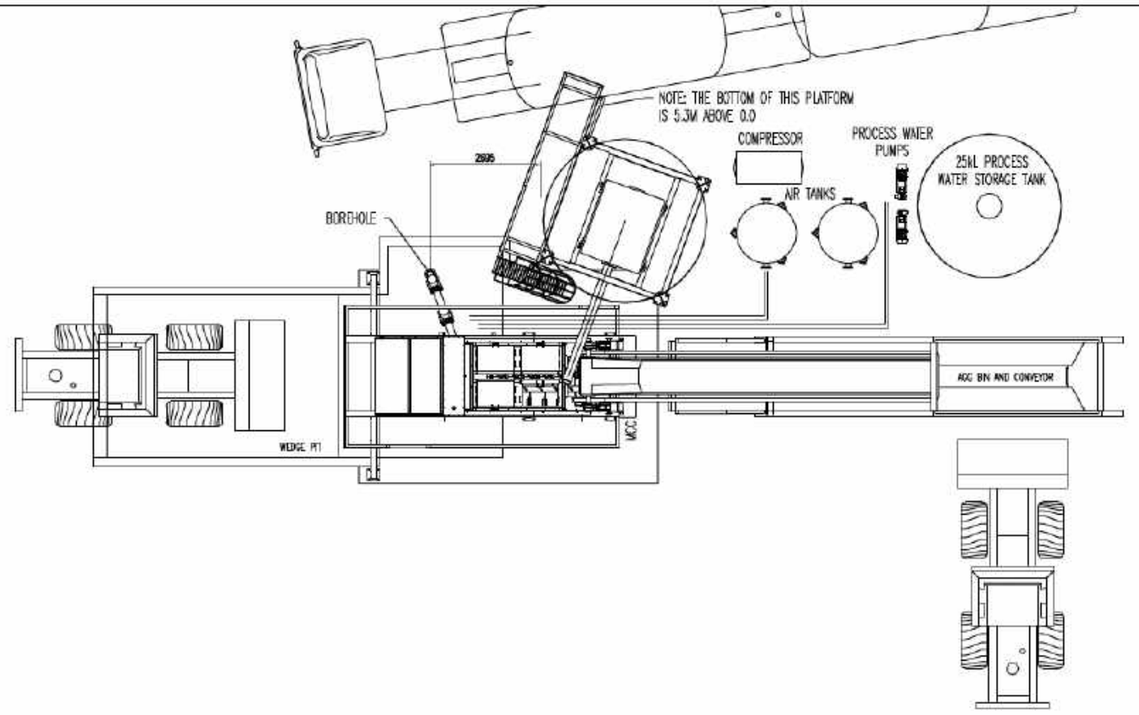
8.2 Environmental Sensitive Receptors Summary

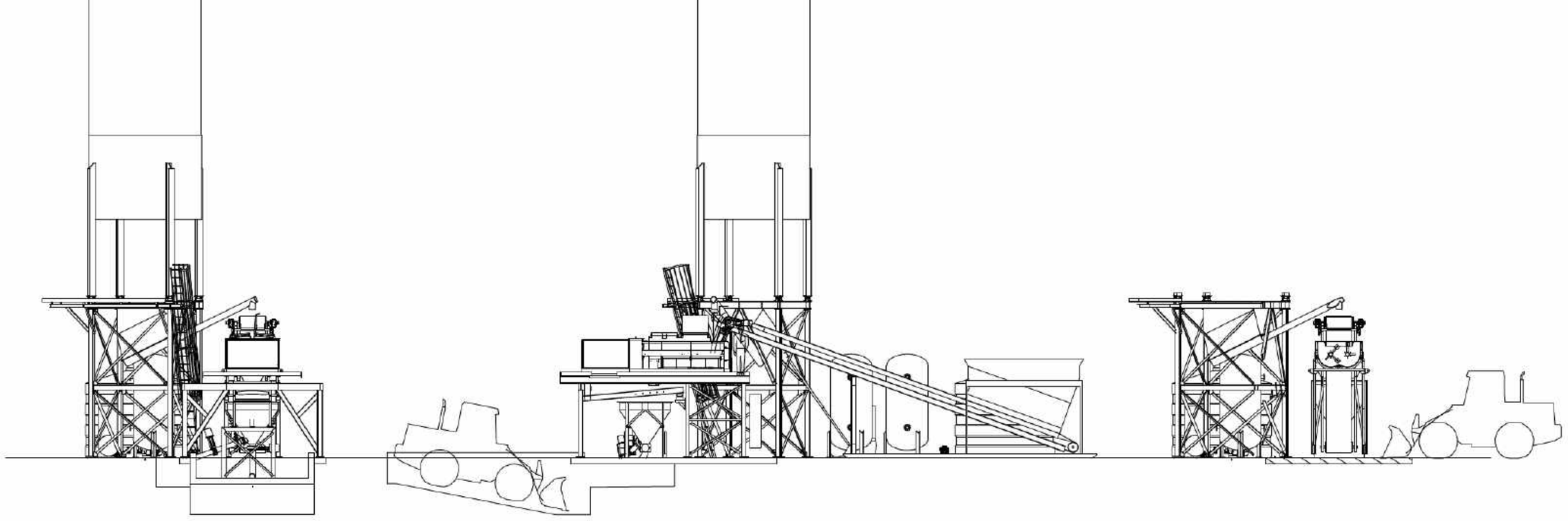
Distances and directions to nearest environmentally sensitive receptors have been reviewed and summarised in Table 8-2. There are no environmentally sensitive receptors within proximity to the proposed activities which would warrant specific controls.

Table 8-2: Environmentally Sensitive Receptors

Type	Description	Distance and Direction	Proposed Controls	Data Source
Environmentally Sensitive Areas	-	80 km northeast	N/A	DWER-046
Threatened Ecological Communities	Jundee Homestead calcrete (Priority 1)	2.5 km northeast	N/A	DBCA-038
Threatened and / or Priority fauna	Database ID 5140 (Priority 4)	2.2 km east	N/A	DBCA-037
Threatened and / or Priority flora	Database ID 87245 (Priority 3)	20 km southwest	N/A	DBCA-036
Aboriginal and other heritage sites	Plover Bore 1 (1372)	2.1 km northwest	N/A	ACHIS 2025
Public drinking water source areas	Wiluna Water Reserve	40 km southwest	N/A	DWER-033
Rivers, lakes, oceans, and other bodies of surface water, etc.	Ephemeral creekline	7 km northwest	N/A	GEODATA TOPO 250K
Acid sulphate soils	High probability of occurrence	9.5 km northeast	N/A	CSIRO 2011

9 Paste Plant General Arrangement (Attachment 8)





CMQ Engineering Pty Ltd.
Manufacturing Concrete Batching-Conveying-Materials Handling Equipment
157-161 COBALT STREET, CAROLE PARK 4300. BRISBANE.
TELEPHONE (07) 3879 3288 FAX (07) 3879 3375

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED
- PROJECTION IS THIRD ANGLE

No.	REVISION	DRAWN	DATE

No.	REVISION	DRAWN	DATE

SCALE	1:75		
DRAWN	S.G.D.	28-08-23	
CHECKED	-	-	
DESIGNED	-	-	
APPROVED	-	-	

CMQ Engineering Pty Ltd.

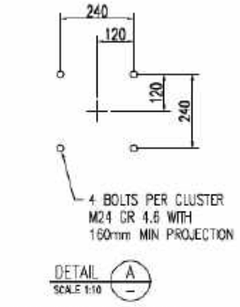
NORTHERN STAR RESOURCES PASTE PLANT
PRELIMINARY PLANT LAYOUT

DRAWING No. A1

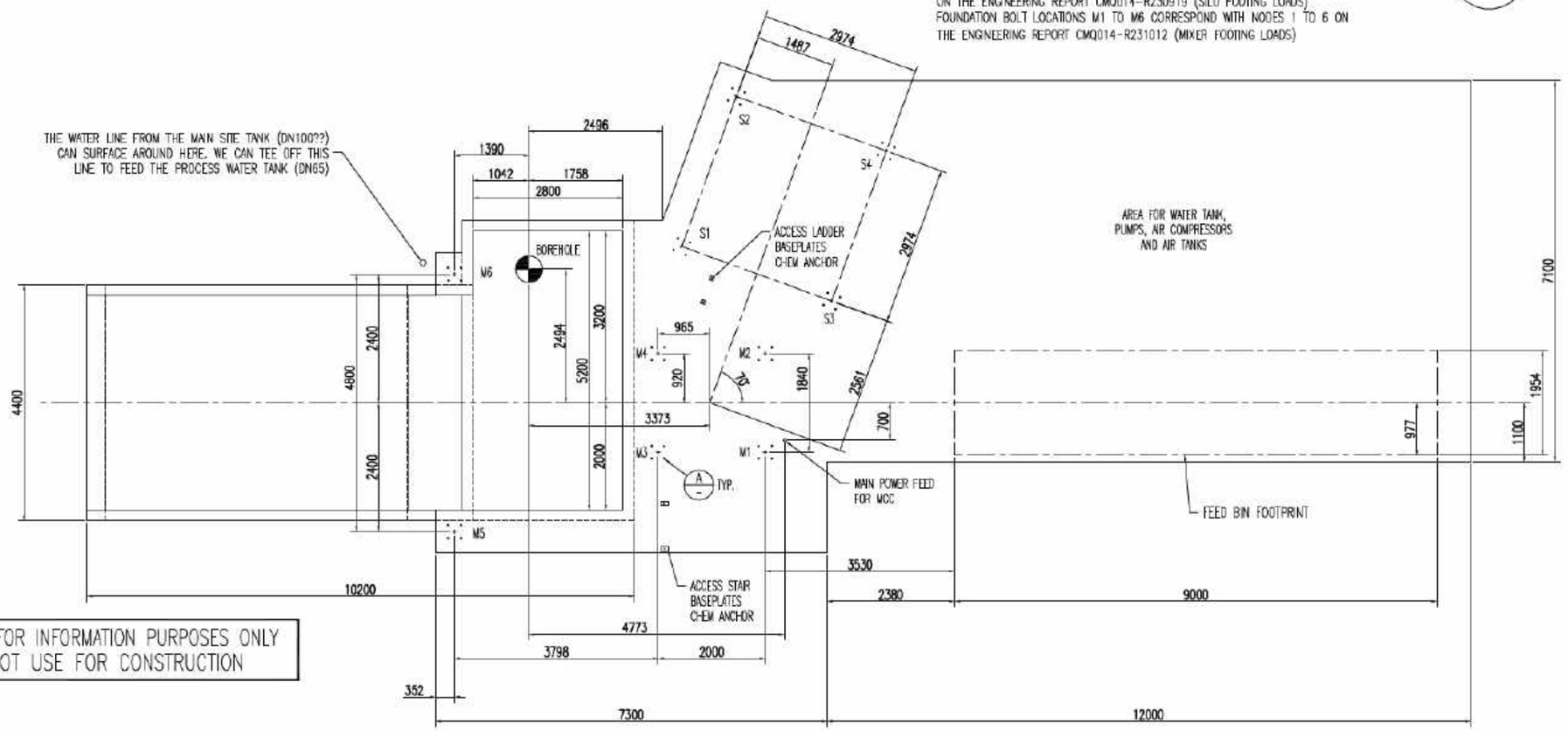
2792-0000

PRINT DATE:

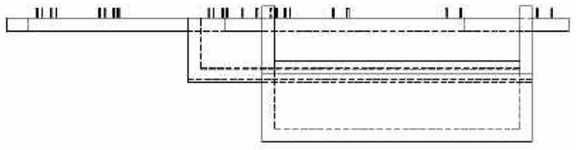
NOTE: FOUNDATION BOLT LOCATIONS S1 TO S4 CORRESPOND WITH NODES 1 TO 4 ON THE ENGINEERING REPORT CMQ014-R230919 (SILO FOOTING LOADS)
FOUNDATION BOLT LOCATIONS M1 TO M6 CORRESPOND WITH NODES 1 TO 6 ON THE ENGINEERING REPORT CMQ014-R231012 (MIXER FOOTING LOADS)

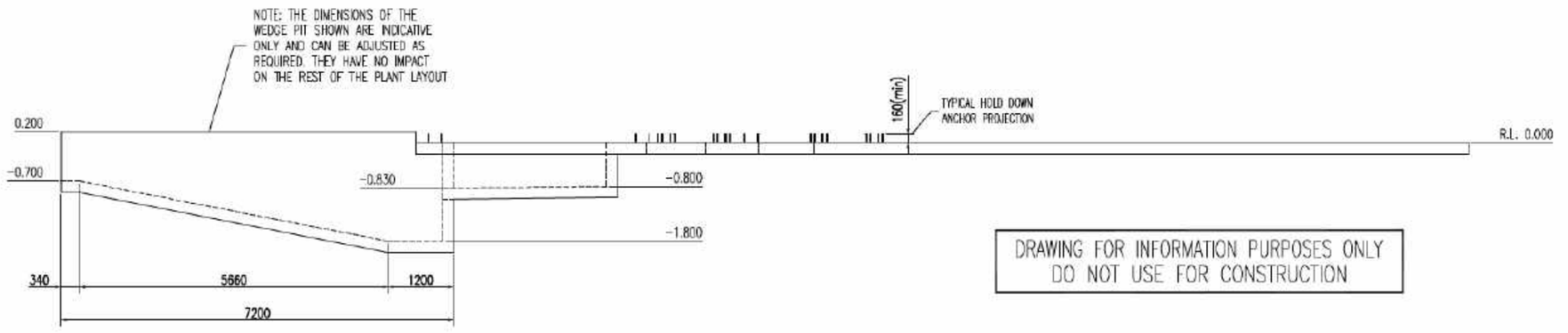


TYPICAL HOLD DOWN BOLT CLUSTER



DRAWING FOR INFORMATION PURPOSES ONLY
DO NOT USE FOR CONSTRUCTION





DRAWING FOR INFORMATION PURPOSES ONLY
DO NOT USE FOR CONSTRUCTION

0 1 2 3 4 5m

CMQ Engineering Pty Ltd.
Manufacturing Concrete Batching-Quarrying-Materials Handling Equipment
157-161 COBALT STREET, CAROLE PARK 4300. BRISBANE.
TELEPHONE (07) 3879 3288 FAX (07) 3879 3379

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED
- PROJECTION IS THIRD ANGLE

No.	REVISION	DRAWN	DATE	No.	REVISION	DRAWN	DATE

SCALE	1:50	
DRAWN	S.G.D.	23-10-23
CHECKED	-	-
DESIGNED	-	-
APPROVED	-	-

CMQ Engineering Pty Ltd.

NORTHERN STAR RESOURCES PASTE PLANT
PRELIMINARY CIVILS LAYOUT

DRAWING No. A1
2792-0100
PRINT DATE:

11 References

Department of Planning, Lands and Heritage (DPLH 2024). Aboriginal Cultural Heritage Inquiry System. Department of Planning, Lands and Heritage. https://espatial.dplh.wa.gov.au/ACHIS/index.html?viewer=ACHIS (accessed 5 March 2025)

Environmental Protection Authority (EPA 2005). Guidance for the Assessment of Environmental Factors (in accordance with the Environmental Protection Act 1986). Separation Distances between Industrial and Sensitive Land Uses No. 3 June 2005.

Fitzpatrick, Rob; Powell, Bernie; & Marvanek, Steve (CSIRO 2011): Atlas of Australian Acid Sulfate Soils. v3. CSIRO. Data Collection. https://doi.org/10.4225/08/512E79A0BC589