



Regional Joint Development Assessment Panel Agenda

Meeting Date and Time: Thursday, 20 July 2023; 9:30am
Meeting Number: RJDAP/106
Meeting Venue: Electronic Means

To connect to the meeting via your computer -
<https://us06web.zoom.us/j/87940767402>

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+61 8 7150 1149

Insert Meeting ID followed by the hash (#) key when prompted - 879 4076 7402

This DAP meeting will be conducted by electronic means (Zoom) open to the public rather than requiring attendance in person.

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Attendance

DAP Members

Tony Arias (Presiding Member)
Kanella Hope (Deputy Presiding Member)
Diana Goldswain (A/Third Specialist Member)
Cr Terrence Winner (Local Government Member, City of Kalgoorlie-Boulder)
Cr Suzie Williams (Local Government Member, City of Kalgoorlie-Boulder)

Officers in attendance

Alex Wiese (City of Kalgoorlie-Boulder)
John Meggitt (City of Kalgoorlie-Boulder)

Minute Secretary

Tenielle Brownfield (DAP Secretariat)

Applicants and Submitters

Lauren Kupsch (BHP)
Duncan Jack (BHP)

Members of the Public / Media

Nil.

1. Opening of Meeting, Welcome and Acknowledgement

The Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being conducted by electronic means (Zoom) open to the public. Members are reminded to announce their name and title prior to speaking.

2. Apologies

Justin Page (Third Specialist Member)

3. Members on Leave of Absence

Nil.

4. Noting of Minutes

Signed minutes of previous meetings are available on the [DAP website](#).

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.



6. Disclosure of Interests

Member	Item	Nature of Interest
Justin Page	8.1	Indirect Pecuniary Interest – The landowner is part of BHP Group Limited, who is a client of Mr Page's employer (Element).

7. Deputations and Presentations

The City of Kalgoorlie-Boulder may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 Lot 100 (Plan No. 212288) Smelterman Drive, Feysville

Development Description:	Proposed Concentrate Dryer and Associated Infrastructure
Applicant:	BHP Nickel West
Owner:	BHP Nickel West Pty Ltd
Responsible Authority:	City of Kalgoorlie-Boulder
DAP File No:	DAP/23/02511

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil.

10. State Administrative Tribunal Applications and Supreme Court Appeals

Current SAT Applications				
File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged
DP/14/00039 DR 65/2020	Shire of York	Lots 4869 (2256), 5931, 9926 (2948) and 26934 Great Southern Highway, St Ronans	Construction and Use of Allawuna Farm for the purposes of a Class II Landfill	28 July 2020
DAP/21/02063 DR241/2021	Shire of Dardanup	Lot 2 Banksia Road, Crooked Brook	Cleanaway Dardanup Landfill Facility	5 November 2021
DAP/22/02403 DR51/2023	City of Bunbury	No.6 (Lot 10) Mossop Street and No.83 (Lot 40) Mangles Street, South Bunbury	Proposed Child Care Premises	23 March 2023
DAP/22/02256 PA80/2022	Shire of Capel	79 (Lot 100) Bussell Highway, Gelorup	Proposed Service Station and Motor Vehicle Wash	30 May 2023



11. General Business

In accordance with Section 7.3 of the DAP Standing Orders 2020 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12. Meeting Closure

**SMELTERMAN DRIVE LOT 100 (PLAN No. 212288),
FEYSVILLE –
PROPOSED CONCENTRATE DRYER AND ASSOCIATED
INFRASTRUCTURE**

Form 1 – Responsible Authority Report

DAP Name:	Regional JDAP	
Local Government Area:	City of Kalgoorlie Boulder	
Applicant:	Kalgoorlie Nickel Smelter General Manager	
Owner:	BHP Nickel West Pty Ltd	
Value of Development:	\$10.5 million ☒ Mandatory (Regulation 5) ☐ Opt In (Regulation 6)	
Responsible Authority:	City of Kalgoorlie Boulder	
Authorising Officer:	Alex Wiese	
LG Reference:	P065/23	
DAP File No:	DAP/23/02511	
Application Received Date:	29 June 2023	
Report Due Date:	2 August 2023	
Application Statutory Process Timeframe:	60 Days	
Attachment(s):	1. BHP Development Plans (Dwgs. No. 311279-DM-001, Rev. 0 & No. 311279-DM-002, Rev. 0 & No. 311279-DM-003, Rev. 0) 2. Appendix 1 – Certificate of Title 3. Appendix 2 – Environmental Noise Assessment 4. Appendix 3 – Water Management Report 5. Appendix 4 – Bushfire Management Plan 6. Ordinary Council Minutes	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	☒ Yes	Complete Responsible Authority Recommendation section
	☐ No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That Council, by Simple Majority, pursuant to Regulation 12 of the Planning and Development (Development Assessment Panels) Regulations 2011 recommends that the Regional Joint Development Assessment Panel resolves to:

Approve DAP Application reference DAP/23/02511 and accompanying plans (Dwgs. No. 311279-DM-001, Rev. 0 & No. 311279-DM-002, Rev. 0 & No. 311279-DM-003, Rev. 0) in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of Clause 6.9 of the City of Kalgoorlie Boulder Local Planning Scheme No. 1, subject to the following conditions:

1. This decision constitutes planning approval only and is valid for a period of two (2) years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
2. The natural ground levels and finished floor levels shown on the approved plans are not permitted to be altered without seeking further approval from the City.
3. Prior to use of this development, stormwater must be directed to the on-site dams.

Details: outline of development application

Region Scheme	N/A
Region Scheme - Zone/Reserve	N/A
Local Planning Scheme	Local Planning Scheme No. 1 (LPS1) Draft local Planning Scheme No. 2 (LPS2)
Local Planning Scheme - Zone/Reserve	LPS1 – Rural LPS2 – General Industry
Structure Plan/Precinct Plan	N/A
Structure Plan/Precinct Plan - Land Use Designation	N/A
Use Class and permissibility:	LPS1 - Industry Extractive – AA use
Lot Size:	8,597m ²
Existing Land Use:	Industry extractive
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☒ N/A ☐ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

The development application proposes the construction and operation of a nickel concentrate dryer and associated infrastructure for the Kalgoorlie Nickel Smelter (NKS), located at Lot 100 Smelterman Drive, Feysville.

The facility is located on freehold land held by BHP Nickel West Pty Ltd (BHP NiW). The land is not located on a mining lease.

The applicant advises that it is:

seeking to obtain planning approval for the construction and operation of a rotary drum steam Concentrate Dryer and conveying system at NKS. The intent of this project is to replace the existing concentrate dryers currently in operation at BHP NiW's Kambalda Concentrate facility (NKC). See Figures 2. and 3.

With a production capacity of 99.5 tonnes per hour (t/h), the Concentrate Dryer will receive and dry nickel concentrate from NiW Mt Keith and Leinster mine operations and third parties. Wet nickel concentrate will be delivered to the NKS Nickel Concentrate Storage Shed via covered side-tipper road trains and each delivery will be managed to minimise any environmental risk.

Background:

The official opening of the smelter took place on 7 April 1973 in the presence of the then Prime Minister of Australia, Gough Whitlam, and the then Premier of Western Australia John Tonkin. The Kalgoorlie Nickel Smelter was the first nickel smelter in Australia.

Previous approvals:

<i>Planning Approval</i>	<i>Description</i>	<i>Granted</i>
P120/21	Planning Approval for the construction and operation of an Oxygen Plant at the Kalgoorlie Nickel Smelter.	23 August 2021
PA120/21	Minor Amendment to DA P120/21 (Oxygen Plant)	25 July 2022
P049/22	Planning Approval for construction and operation of the Stabilised Residue Storage Dam #3 at the Kalgoorlie Nickel Smelter.	11 May 2022
P055/22	Planning Approval for construction and operation of an Oxygen Production Plant 2 at the Kalgoorlie Nickel Smelter.	13 June 2022
P004/23	Planning Approval to install and operate a Nickel Concentrate Storage Shed at the Kalgoorlie Nickel Smelter.	13 March 2023
P016/23	Planning approval for the construction of an electrostatic precipitator unit and switchroom.	21 April 2023

The Subject Land:

The subject land is located approximately 12km south of the Kalgoorlie Town Centre and measures 594.82 hectares. The site sits among other mining operations, with the nearest sensitive receptors located within South Boulder, approximately 8km to the north.

The nickel smelter facility, which opened in 1973, houses various administration buildings, plant and equipment, principally centred on the railway line, and also comprises substantial areas of impermeable bitumen seal and concrete surfaces. See Figure 1.

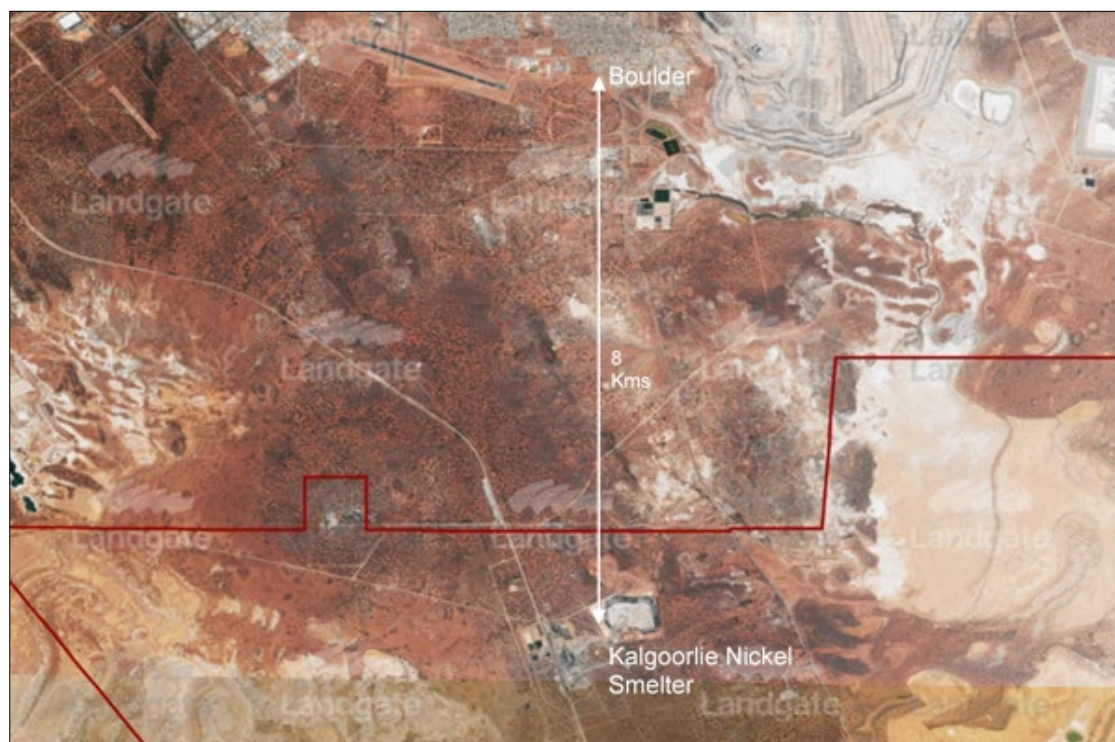


Figure 1. The Subject Site

Legislation and Policy:

Legislation

Planning and Development (Local Planning Schemes) Regulations 2015
(cf clauses 62, 63, 63A and 67).

Planning and Development (Development Assessment Panels) Regulations 2011
5. Mandatory DAP applications (Act s. 171A(2)(a) (b).

City of Kalgoorlie Boulder Local Planning Scheme (LPS) 1
(cf clauses 3.1, 3.2, 3.3, 3.5, 3.17, 5.2, 5.3, 5.12, 5.16, 6.1, 6.3, 6.4, 6.5, and 6.8.).

Draft City of Kalgoorlie Boulder Local Planning Scheme (LPS) 2

(cf clauses 16, 17, 18, 29, 31, 32, 37 and 38).

State Government Policies

SPP 3.7: Planning in Bushfire Prone Areas.

SPP 2: Environment and Natural Resources Policy.

Structure Plans/Activity Centre Plans

N/A

Local Policies

N/A

Consultation:

Public Consultation

Consistent with previous applications for the nickel smelter, no public consultation was undertaken as the proposal is consistent with the established use of the site and it is not anticipated that it will have an adverse impact on the amenity of the local area or the Kalgoorlie Boulder town site.

Referrals/consultation with Government/Service Agencies

Consistent with the previous applications, no referrals were made. The applicant will be lodging a Works Approval application with the Department of Water and Environmental Regulation (DWER), as per the requirements of section 54 of the EP Act, for the Proposed Development.

Planning Assessment:

The proposal has been assessed against all the relevant legislative requirements of the Scheme, State and Local Planning Policies, and outlined in the Legislation and Policy section of this report. See Figures 2 and 3. for plans of the proposed development.

The following matters have been identified as considerations for the determination of this application:

Local Planning Scheme 1:

The subject land is zoned Rural under LPS1. As a development within the Rural Zone, the Proposed Development must comply with the following objectives as set out in clause 3.17 of LPS1:

- (a) To provide for the development of rural activity as appropriate.*
- (b) To provide for the development of mining activity as appropriate.*
- (c) To protect land from urban uses that may jeopardise the future use of that land for priority mining and rural uses.*
- (d) To accommodate the development of isolated communities including Aboriginal and railway settlements.*

The Proposed Development is considered consistent with objectives (b) and (c) of the Rural Zone. This is on the basis that the proposed facility is directly related to the mining industry through the processing of minerals provided from mining activity. The facility is to be located within an established mineral processing facility at a site which is remote from urban uses.

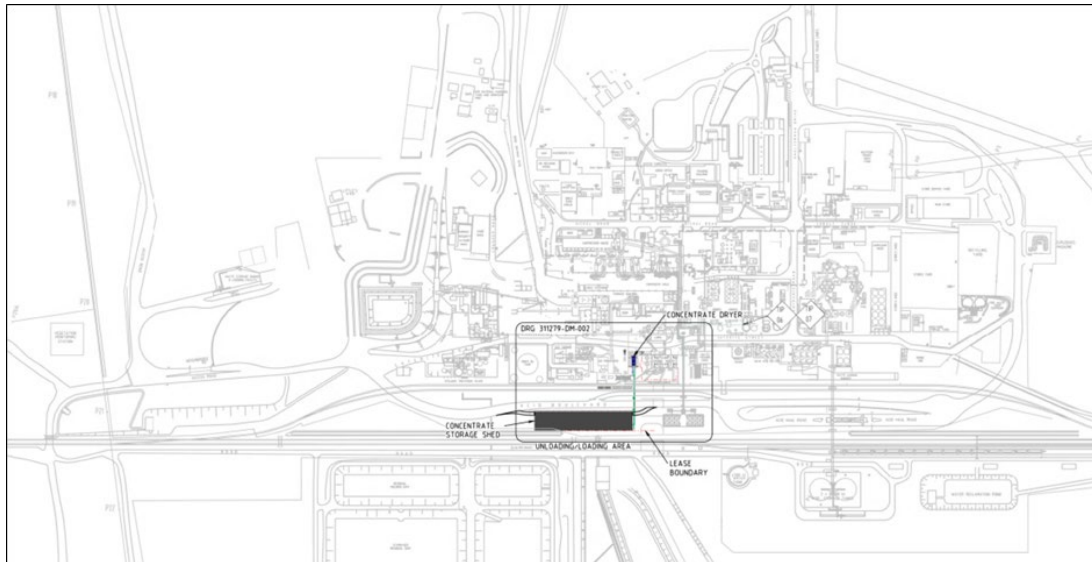


Figure 2. Site Plan – The concentrate dryer and conveying system are highlighted.

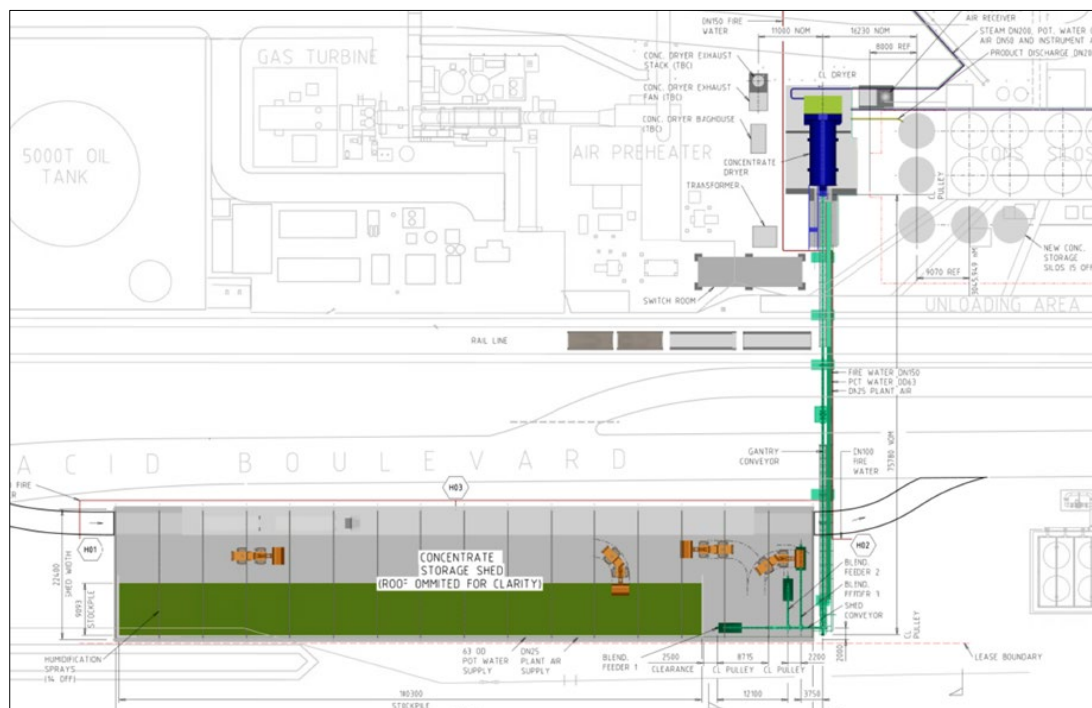


Figure 3. Concentrate handling mechanical plan.

The proposed activity involves the treatment and manufacture of products from minerals mined elsewhere. The Use Class is considered as Industry – Extractive, defined in the LPS1 as:

‘an industry which involves the extraction of sand, gravel, clay, turf, soil, rock, stone, minerals, or similar substance from the land, and also the storage, treatment or manufacture of products from those materials as extracted or on land adjacent thereto”

Development standards for Industry Extractive under LPS1:

Use Class	Minimum Setbacks	Max. Plot Ratio	Max. Site Coverage	Parking	L'scaping	Special Conditions
Industry Extractive	Street: Req'd: 9.0m Prov'd: 75m Side: Req'd: 9.0m Prov'd: 300m Rear: Req'd: 9.0m Prov'd: 36m	Permitted: 0.6 Provided: 0.1	Permitted: 60% Provided: 25%	N/A Nil NLA	Req'd: 2m strip on street frontage Nil prov'd	Parking not required. to be sealed.

It is considered that the proposed facility generally satisfies the development standards of LPS1.

Draft Local Planning Scheme 2:

Pursuant to the City's draft Local Planning Scheme No. 2 (Draft LPS2) that was released for advertising, the subject land is proposed to be included in the 'General Industry' zone. The objectives for this zone are provided in Table 3 of the Draft LPS2 and state as follows:

- *To provide for a broad range of industrial, service and storage activities which, by the nature of their operations, should be isolated from residential and other sensitive land uses;*
- *To accommodate industry that would not otherwise comply with the performance standards of light industry;*
- Seek to manage impacts such as noise, dust and odour within the zone;

Draft LPS2 includes a land use classification of 'Mining Operations' which is defined as:

- 'premises where mining operations, as that term is defined in the Mining Act 1978 section 8(1) is carried out.'

The relevant definition from the Mining Act 1978 (WA) is as follows:

'mining operations means any mode or method of working whereby the earth or any rock structure, stone, fluid or mineral bearing substance may be disturbed, removed, washed, sifted, crushed, leached, roasted, distilled,

evaporated, smelted, combusted or refined or dealt with for the purpose of obtaining any mineral or processed mineral resource therefrom whether it has been previously disturbed or not and includes —

- a) the removal of overburden by mechanical or other means and the stacking, deposit, storage and treatment of any substance considered to contain any mineral; and*
- b) operations by means of which salt or other evaporites may be harvested; and*
- c) operations by means of which mineral is recovered from the sea or a natural water supply; and*
- (da) operations by means of which a processed mineral resource is produced and recovered; and*
- d) the doing of all acts incident or conducive to any such operation or purposes;'*

It is considered that the proposed development falls within the above definition of mining operations.

The table below addresses the applicable/relevant requirements contained in Schedules 2 to 10 of the Draft LPS2. BHP NiW considers the Proposed Development adequately complies with the applicable development requirements of the Draft LPS2.

Development standards for General Industry under draft LPS2:

Min. Lot Area	Max. Plot Ratio	Setbacks	Landscaping	Building height
Required: 1,000m ² Provided: 595ha.	Permitted: 0.8 Proposed: 0.1	Front Required: 3.0m Provided: 75m Side Required: Nil Provided: 300m Rear Required: Nil Provided: 36m	Required: 10% Proposed: Nil	Maximum Permitted: 20m Proposed: 45m Concentrate vent stack.

It is noted that Schedule 5 Development Standards – Building Format, Cl. 3 Building Height s2. (h) states that mining related structures may exceed the prescribed heights provided that the structure or facility is designed, sited and/or treated so as to not detract from the visual amenity of the locality.

It is considered that the proposed facility generally satisfies the development standards of draft LPS2.

SPP 3.7: Planning in Bushfire Prone Areas.

The proposed nickel concentrate dryer is situated outside of the designated bushfire prone area as per the Western Australia State Map of Bush Fire Prone Areas (DFES 2021), however some of the associated infrastructure – storage shed - is included in the bushfire prone area.

A bushfire assessment and management plan has been completed by an accredited bushfire consultant EcoLogical. The Bushfire Attack Level Assessment and is included as part of the application.

The bushfire consultant undertook a Method 1 Bushfire Attack Level ('BAL') Assessment for the Proposed Development. Based on the site assessment and BAL assessment, the Proposed Development achieves a BAL rating of BAL-12.5.

EcoLogical (2022) concluded that the Proposed Development is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is therefore recommended for planning approval.

SPP 2: Environment and Natural Resources Policy.

In relation to Cl. 5.7 Minerals, petroleum and raw material resources the policy states that Planning strategies, schemes and decision-making should:

- (i) Identify and protect important and economic mineral resources to enable mineral exploration and mining in accordance with acceptable environmental standards.
- (ii) Identify and protect important basic raw material resources and provide for their extraction and use in accordance with Statement of Planning Policy No. 10: Basic Raw Materials.
- (iii) Support sequencing of uses where appropriate to maximise options and resultant benefits to community and the environment.

LPS1 and draft LPS2 both facilitate the ongoing development of the mining industry in Kalgoorlie Boulder in accordance with SPP2 and it is considered that the proposed concentrate dryer and associated infrastructure additions to the existing BHP nickel smelter are consistent with the sequencing of uses anticipated in the policy.

Environmental Noise Assessment:

The applicant provided a noise assessment undertaken by Talis Consultants, the report concluded that:

from the modelling and analysis undertaken, the environmental noise assessment has concluded that the upgraded facility (existing facility plus Concentrate Dryer Project) complies with the assigned noise levels at all receivers during all times of day, evening and night.

As a result, no noise mitigation is required or proposed for the Project.

Stormwater Management Report:

A Water Management Report (WMR) was prepared by Advisian (2021) for the applicant. The document outlines the impacts on the existing stormwater management arrangements.

These facilities are located within the Plant and Administration catchment (29 ha). The catchment is predominantly impervious (concrete and bitumen surfaces), with some areas of bare ground adjacent to the railway.

Stormwater within this catchment is conveyed by a network of underground pits and pipes, along with concrete channels and sediment traps. Flow is conveyed through this network under the railway to the North and South ponds. Water within these ponds is pumped to the Residue Dam facilities for recycling as process water, allowing for management of water levels.

The assessment concluded that there is no increase in discharge offsite, or significant modification of the existing stormwater management system. The minor increase in impervious area does not impact the performance of the North and South ponds.

Air Quality Impact

The applicant advises that the primary emission risk from the proposed development is air pollution potentially resulting in impacts to air quality in surrounding areas. The applicant is of the view that this has been adequately addressed by the design of the facilities furthermore it will be regulated by DWER through the Works Approval and Licence Amendment processes.

The applicant advises that air emissions from construction activities are expected to be inconsequential. BHP NiW will utilise existing waste management vendors and manage construction waste in accordance with existing NKS waste management practices.

Environmental Protection Act 1986

The applicant is required to satisfy the approval requirements of the Department of Water and Environmental Regulation ('DWER'), as per the requirements of section 54 of the EP Act.

Works approval applications are intended to be considered in parallel with an application for development approval. Any potential air emissions, noise emissions or wastewater discharges are to be assessed by DWER which is the primary regulator for emissions and discharges from a prescribed premises.

Conclusion:

The proposed development will be a relatively minor addition to the nickel refinery that has been in operation at the site for 50 years. It is considered that the minor variations from the prescribed standards under LPS1 and draft LPS2 are minor in nature and will not have an adverse impact on the environment of the immediate area or the Kalgoorlie Boulder town site generally. It is recommended that the development application be supported.



Nickel West Kalgoorlie Development Application

Smelterman Rd, Feysville,
Kalgoorlie - Boulder, WA

Concentrate Dryer Project

15 May 2023



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1. Purpose of Document

BHP Nickel West Pty Ltd (BHP NiW) operates the Kalgoorlie Nickel Smelter (NKS), located at Lot 100 on Deposited Plan 212288 or otherwise known as 100 Smelterman Drive, Feysville. This document is in support of an application for planning approval to install and operate a Nickel Concentrate Dryer and conveyor system at NKS (Proposed Development and/or Proposal).

In accordance with the City of Kalgoorlie-Boulder (the City) requirements, the following items are also included with this application:

- Application for Planning Approval Form;
- Certificate of Title;
- Relevant plans, including:
 - Site plan
 - Site aerial photograph
 - Location plan
 - Detailed plan
 - Elevation plan
- Supporting assessments

Payment of the City's application fee of \$19,398 (based on an estimated cost of development of \$10,500,000) which will be made upon receipt of an invoice.

2. BHP Nickel West

Western Mining Corporation Ltd completed a name change to WMC Resources Ltd in 1996, prior to the company being purchased by BHP Billiton in 2006 and becoming BHP Billiton Nickel West Pty Ltd. Subsequently in April 2021 BHP Billiton Nickel West Pty Ltd, aligning with the BHP parent company, completed a name change to become BHP NiW.

BHP NiW is the registered holder of Lot 100 on Deposited Plan 212288 (Appendix 1 – Certificate of Title).

3. Site Details

The NKS is situated on Lot 100 of Deposited Plan 212288, which is 594.8179 hectares (ha) in size and is intersected by the West Kalgoorlie Esperance Railway. This creates a 234.2409 ha western portion and a 360.5769 ha eastern portion of the NKS site. Access to the NKS facility is via Smelterman Drive, which extends westward approximately 1.7 km from Goldfields Highway to the property boundary, where it then continues through via Lot 66 on Plan 14433.

The NKS facility consists of various administration buildings, plant and equipment, principally centred adjacent to the railway corridor, and also comprises of substantial areas of impermeable bitumen seal and concrete surfaces. The NKS facility forms part of a number of sites/facilities which contribute to BHP NiW's product flow.

3.1 Location

The NKS facility is situated in the Goldfields region of Western Australia, approximately 558 km east of Perth and approximately 15 km south of the City of Kalgoorlie-Boulder, address, 100 Smelterman Drive, Feysville (being Lot 100 on Deposited Plan 212288) (**Figure 1**).

The NKS facility is located adjacent to the Woolibar pastoral lease on eastern and western boundaries, with the surrounding area comprising of predominantly native vegetation with mining operations and associated infrastructure present. The nearest sensitive receptors are located within South Boulder, approximately 8 km to the north.

4. Previous Approvals

4.1 State Agreement

BHP NiW operates the NKS, originally constructed and commissioned in 1973 under the *Nickel Refinery (Western Mining Corporation Limited) Agreement Act 1968* (the State Agreement). The State Agreement was terminated in 2008 under the agreement ratified by the *Nickel Refinery (BHP Billiton Nickel West Pty Ltd) (Termination of Agreements) Agreement Act 2008 (WA)*. The NKS facility is not located on a mining lease and presently sits on freehold land held by BHP NiW and continues to be operated pursuant to applicable laws (**Figure 1**; Appendix 1 – Certificate of Title).

4.2 Current Planning Approvals

Table 1 is a summary of the current and pending Planning Approvals at the NKS:

Table 1: Planning Approvals at NKS

Planning Approval	Description	Granted	Expiry ¹
P120/21	Planning Approval for the construction and operation of an Oxygen Plant at the Kalgoorlie Nickel Smelter.	23 August 2021	22 August 2023
PA120/21	Minor Amendment to DA P120/21 (Oxygen Plant)	25 July 2022	25 July 2024
P049/22	Planning Approval for construction and operation of the Stabilised Residue Storage Dam #3 at the Kalgoorlie Nickel Smelter	11 May 2022	10 May 2024
P055/22	Planning Approval for construction and operation of an Oxygen Production Plant 2 at the Kalgoorlie Nickel Smelter.	13 June 2022	13 June 2024
P004/23	Planning Approval to install and operate a Nickel Concentrate Storage Shed at the Kalgoorlie Nickel Smelter.	TBC	TBC

¹ Applicable where the development of the approval is not substantially commenced within a period of 2 years, or another period specified in the approval after the date of the determination.

4.3 Environmental Licencing

The NKS operates in accordance with licence L8653/2012/2 (L8653), issued under Part V of the *Environmental Protection Act 1986* (EP Act), authorising the below prescribed activities:

- Category 31: Chemical manufacturing;
- Category 39: Chemical or oil recycling;
- Category 44: Metal smelting or refining;
- Category 52: Electric power generation; and
- Category 87: Fuel burning.

Initially granted on 11 June 2015, L8653 was amended 14 August 2017 to extend the date of expiry to 10 June 2034.

A Works Approval application is planned to be submitted to the Department of Water and Environmental Regulation (DWER), as per the requirements of section 54 of the EP Act, for the Proposed Development.

BHP NiW holds the following Clearing Permit CPS 9556/1, granted under section 51E of the EP Act, authorising the clearing of up to 231 hectares of native vegetation from the period between 7 July 2022 and 7 July 2032.

The clearing of any native vegetation proposed to enable the implementation of the Proposed Development is authorised by CPS 9556/1.

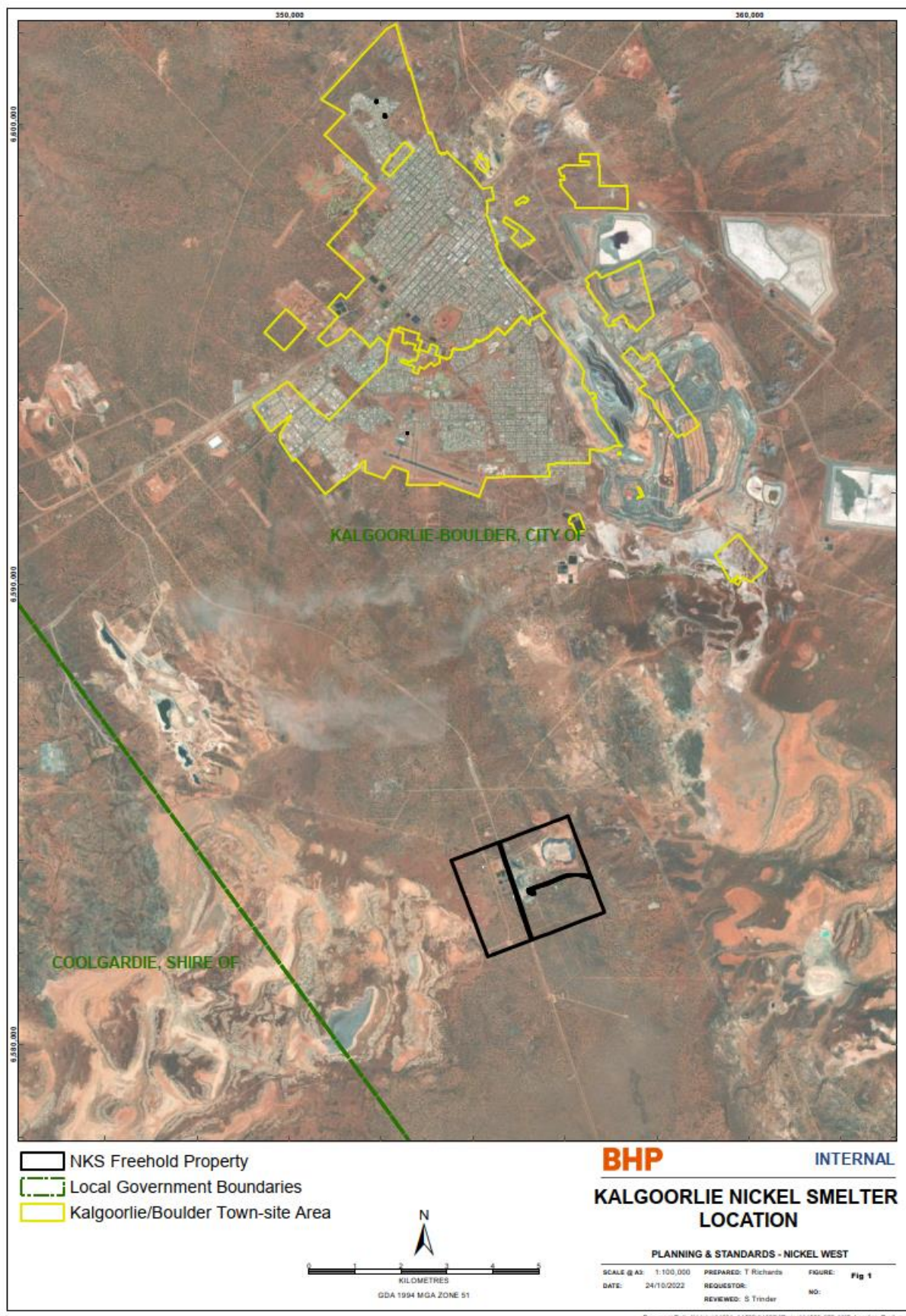




Figure 2: Proposed Development Area

5. Proposed Development

NiW is seeking to obtain planning approval for the construction and operation of a rotary drum steam Concentrate Dryer and conveying system at NKS (**Figure 2, Figure 3, Figure 4, Figure 5**). The intent of this project is to replace the existing concentrate dryers currently in operation at BHP NiW's Kambalda Concentrate facility (NKC). BHP NiW proposes to install a wet concentrate delivery and storage system at NKS and to dry the concentrate via a steam dryer immediately prior to storage in existing dry concentrate silos.

With a production capacity of 99.5 tonnes per hour (t/h), the Concentrate Dryer will receive and dry nickel concentrate from NiW Mt Keith and Leinster mine operations and third parties. Wet nickel concentrate will be delivered to the NKS Nickel Concentrate Storage Shed via covered side-tipper road trains and each delivery will be managed to minimise any environmental risk.

As detailed under the scope of BHP NiW's Planning Application for the Concentrate Storage Shed (P004/23), the concentrate will be handled within the shed by a loader. The loader will assist to blend the concentrate as required within the shed and offload the blended concentrate into a transfer hopper situated inside the shed.

The hopper will discharge the blended concentrate into a covered conveyor located outside the shed (the subject of this Planning Application). The conveying system transports the concentrate up and over both Acid Boulevard and the rail siding. It discharges the nickel concentrate, via an enclosed chute, into the Concentrate Dryer feed chute. The rotary drum steam dryer will then dry the concentrate and pneumatically convey the dried concentrate (<0.2% moisture) to existing concentrate storage silos.

A baghouse filter unit will be installed to capture any remaining fine concentrate particles prior to air emissions discharge via the Concentrate dryer vent stack. Any material collected in the baghouse will be pneumatically conveyed to the concentrate storage silos. After passing through the baghouse, the dryer exhaust gas will be released to atmosphere through the dryer vent stack which has a height of 45 metres from ground level.

Construction is expected to commence October 2023 and be completed by September 2024. The Proposed Development will not receive, store or dry nickel concentrate until all relevant approvals are obtained.

5.1 Location of Proposed Development

The Proposed Development will be installed in an already disturbed area within the existing operational facility (**Figure 3, Figure 6**). The Proposed Development location is completely within the City of Kalgoorlie-Boulder.

The NKS is generally flat, including the Proposed Development site.

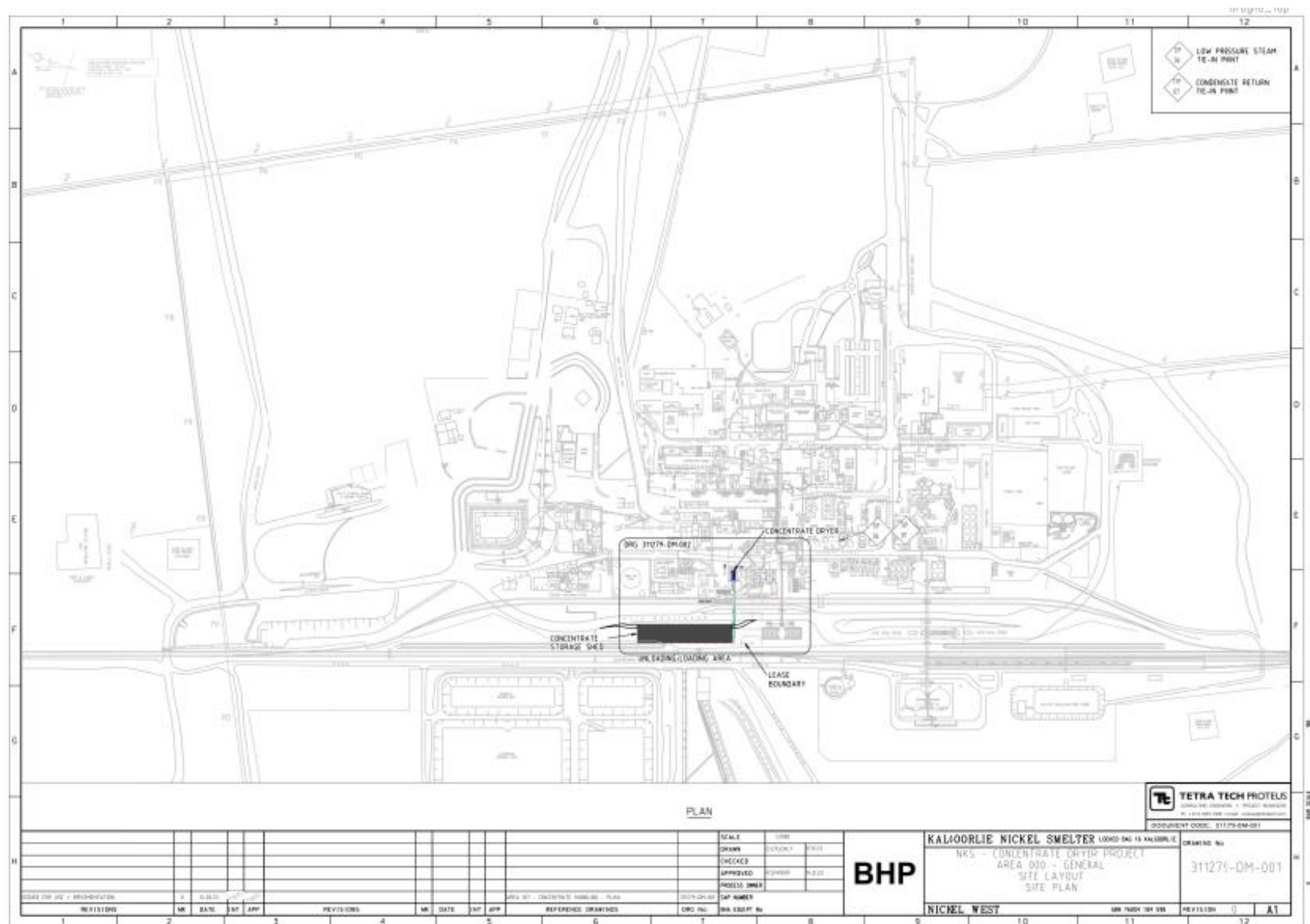


Figure 3: General Site Layout Plan

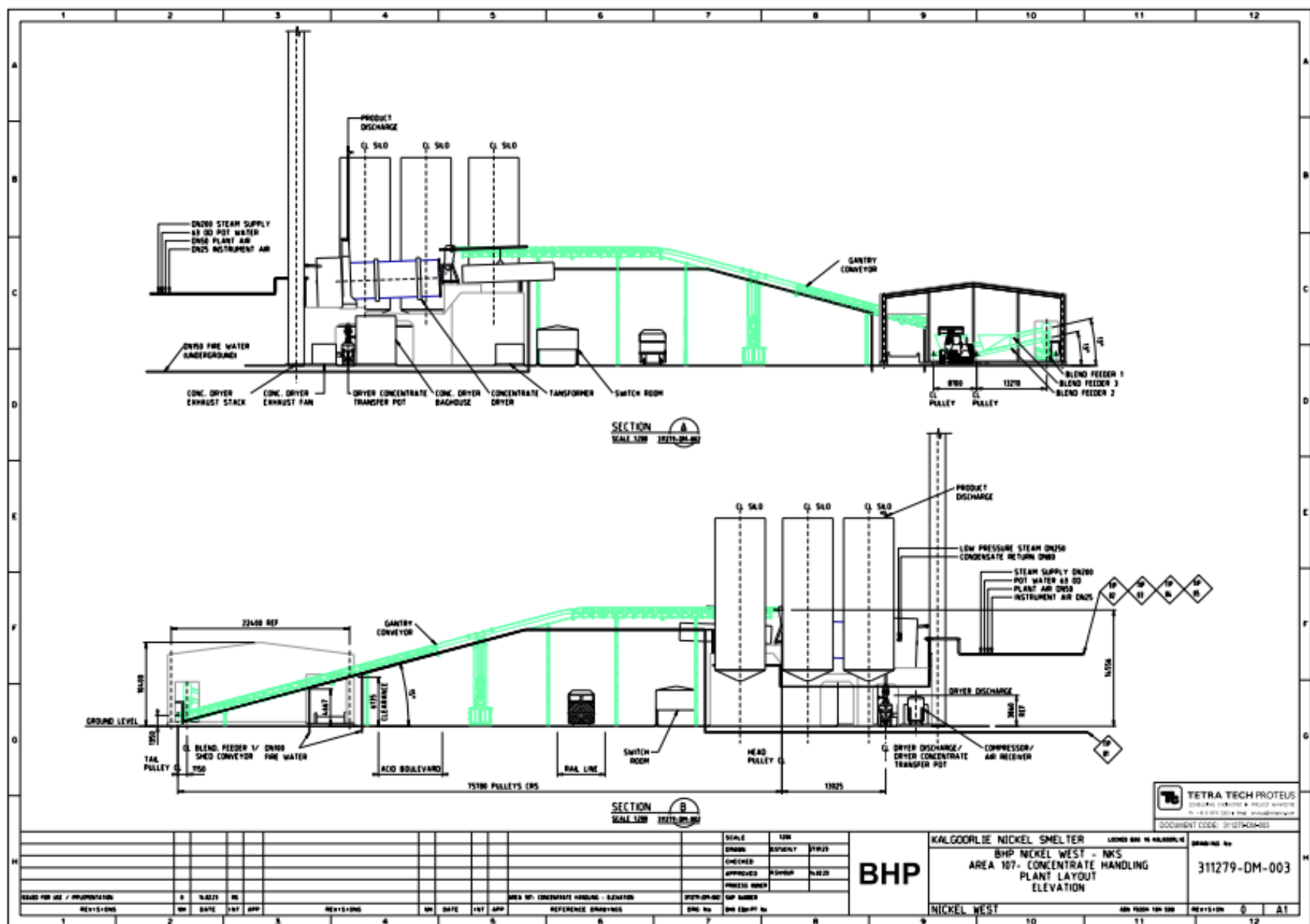


Figure 5: Concentrate Handling Plant Layout Elevation



Figure 6: Proposed Location of Concentrate Dryer

5.2 Air Emissions

5.2.1 Dust

Potential fugitive dust emissions may arise during the construction of the Proposed Development. Potential fugitive dust sources associated with construction of the Concentrate Dryer include, but are not necessarily limited to:

- Trafficable and wheel generated dust on access roads or temporary construction roads;
- Material stockpiles and storage;
- Ground disturbance activities associated with the operation of earthmoving equipment; and
- Excavation and transfer of construction materials, including borrow material.

A range of dust control measures will be implemented throughout the construction phase. In accordance with the control hierarchy, these measures include elimination, management and operational measures. Dust control measures which will be implemented throughout the construction phase include, but are not necessarily limited to:

- Control and restriction of construction equipment, including:
 - reduced speed limits;
 - minimised active/working areas;
 - controlled direction of construction equipment cognisant of construction activities and meteorological conditions; and
 - Implementation of the site traffic management plan.
- Consideration of predictive meteorology monitoring at pre-starts;
- Regular meteorology monitoring throughout construction shifts; and
- Application of dust suppression including water carts and sprinklers as required.

If excessive dust emissions are observed additional water suppression will be applied to ensure no dust emissions off site result. BHP NiW will regularly review adequacy of these controls and implement improvements as required.

During the operations phase, the conveying system will be fully covered to eliminate any potential particulate emissions. The nickel concentrate will be discharged from the conveying system into the Concentrate Dryer via an enclosed discharge chute. After drying, the concentrate will be pneumatically conveyed to existing silos via steel pipes. The dust collection system currently used for the existing silos will continue to be utilised.

5.2.2 Key Pollutants – Particulate Matter and Sulphur Dioxide

The air pollutants arising from the drying and processing of nickel concentrate are Particulate Matter (PM) (Total Suspended Particulates (TSP), PM10 and PM2.5), sulphur dioxide, and particulate nickel and arsenic. Atmospheric dispersion modelling has been undertaken according to DWER's 2019 *Guidelines for air emissions (consultation draft)*.

Air quality for the Proposed Development will be managed in accordance with DWER's Works Approval and Licence Amendment processes under Part V of the EP Act.

Air quality will be managed as per BHP NiW's internal management systems.

5.3 Noise Emissions

The NKS facility is surrounded by primarily rural land, with the nearest township at Kalgoorlie Boulder located approximately 8km north of the facility. The facility operates 24 hours a day, 7 days a week. Therefore, noise emissions must comply with the most stringent night-time assigned noise levels defined in the *Environmental Protection (Noise) Regulations 1997*.

Noise modelling and analysis was undertaken for the existing facility plus the Proposed Development by Talis Consultants (Appendix 2 – Noise Assessment). Four noise sensitive receptors were identified: three in the Kalgoorlie-Boulder area and one at the Lake Douglas Campground. The environmental

noise assessment concluded that the facility complies with the assigned noise levels at all receptors during all times of day, evening and night.

As a result, no noise mitigation is required or proposed for the Proposed Development.

Noise emissions for the Proposed Development will be assessed and managed in accordance with DWER's Works Approval and Licence Amendment processes under Part V of the EP Act.

5.4 Stormwater Management

The Concentrate Dryer is located in a catchment that is predominantly impervious (concrete and bitumen surfaces). Stormwater within this catchment is conveyed by a network of underground pits and pipes, along with concrete channels and sediment traps. Flow is conveyed through this network under the railway to the North and South ponds. Water within these ponds is pumped to the Residue Dam facilities for recycling as process water, allowing for management of water levels. No water is discharged to the environment.

The capacity of the ponds was assessed by Advisian in 2021 and it was identified that there is sufficient capacity for the retention of frequent and minor rainfall which minimises the risk of pollutants being mobilised offsite. Major rainfall events are generally contained within the ponds up to the 1% Annual Exceedance Probability (AEP) 12-hour event during typical conditions.

It was determined that construction of the Concentrate Dryer is likely to have no impact on the performance of the stormwater management system as it is located on an impervious portion of the catchment (Appendix 3 – Water Management).

6. Statutory Planning Framework

6.1 Planning and Development Act

The overarching legislation regulating the development of land in Western Australia is the *Planning and Development Act 2005* (WA) (P&D Act). The P&D Act makes provision for various planning instruments including regional and local planning schemes, improvement plans, and state planning policies.

6.2 City of Kalgoorlie-Boulder Local Planning Scheme No. 1

The NKS is zoned 'Rural' pursuant to the City's Local Planning Scheme No. 1 (LPS1). As a development within the 'Rural Zone', the Proposed Development must comply with the following objectives as set out in clause 3.17 of LPS1:

- (a) *To provide for the development of rural activity as appropriate.*
- (b) *To provide for the development of mining activity as appropriate.*
- (c) *To protect land from urban uses that may jeopardise the future use of that land for priority mining and rural uses.*
- (d) *To accommodate the development of isolated communities including Aboriginal and railway settlements.*

The Proposed Development is considered consistent with objectives (b) and (c) of the 'Rural Zone'. This is because the Proposed Development is for the provision of additional infrastructure to ensure the continuation of the existing facility, which is a component of a larger mining operation/activity.

The NKS Use Class is considered as 'Industry – Extractive', defined in the LPS1 as:

'an industry which involves the extraction of sand, gravel, clay, turf, soil, rock, stone, minerals, or similar substance from the land, and also the storage, treatment or manufacture of products from those materials as extracted or on land adjacent thereto'.

This planning application is not seeking to change the approved land use. Development Standards for individual land use classifications are detailed in Table 2 of the LPS1. The Proposed Development consideration of the Development Standards applicable to the Industry – Extractive are detailed in Table 2.

Table 2: LPS1 Development Standards for Industry - Extractive

Requirement	Proposed Development
Minimum Setbacks Street: 9m Side: 9m Rear: 9m	The majority of the Proposed Development is situated more than 9 m from the central boundary of Lot 100 of Plan 212288. A portion of the conveyor connecting to the Concentrate Storage Shed is less than 9m from the central boundary (Figure 3). The proposed Concentrate Dryer (including conveyor) is aligned with current operations and adjoining land uses. BHP NiW considers it warranted that the Council approves the development under Clause 4.19.1 of Scheme 1. In accordance with Clause 4.19.3 of Scheme 1, BHP NiW does not consider the portion of the conveyor located less than 9m from the central boundary will affect other land users of the railway corridor. Further, BHP NiW does not consider that the location of the proposed Concentrate Dryer or conveyor will have any adverse impacts on the likely future development of the locality. The Proposed Development is considered consistent with existing approved NKS infrastructure, whereby nearby storage dam infrastructure is located within 9 m of the boundary adjacent the railway corridor. Notification to the railway operator, Arc Infrastructure, will be undertaken prior to commencing works.

Requirement	Proposed Development
Maximum Plot Ratio: 0.6	A specific plot ratio calculation of all existing and Proposed Development has not been undertaken but is considered to be substantially below the maximum 0.6 allowed due to the large size of the lot.
Maximum Site Coverage: 60%	The total site coverage of all existing and Proposed Development on site equates to approximately 25% and is therefore far less than the maximum 60% allowed.
Parking: One bay/100m ² NLA (excluding outdoor machinery)	The Proposed Development is not considered a 'Net Lettable Area' and therefore does not increase the existing parking requirement.
Landscaping: Minimum 2m strip along all street frontages or within all street setback areas	The subject land arguably does not have a 'street frontage' and the existing development on-site has not previously applied these landscaping requirements. Given the subject land is relatively isolated and the additional plant proposed as part of this proposal will not be visible or accessible by the public, BHP NiW requests that the Council exercises its discretion to waive the requirements for landscaping, as set out in clause 4.19 of LPS1. It is not considered that the lack of landscaping in this instance will have an adverse effect upon the occupiers or users of the development or the inhabitants of the locality or upon the likely future development of the locality (clause 14.19.3(b)).
Special Conditions: Parking areas do not need to be sealed	Not applicable as the Proposed Development does not increase the existing parking requirement.

The NKS is zoned 'Rural' pursuant to the City's Local Planning Scheme No. 1 (LPS1). As a development within the 'Rural Zone', the Proposed Development must comply with the following objectives as set out in clause 3.17 of LPS1:

- (e) *To provide for the development of rural activity as appropriate.*
- (f) *To provide for the development of mining activity as appropriate.*
- (g) *To protect land from urban uses that may jeopardise the future use of that land for priority mining and rural uses.*
- (h) *To accommodate the development of isolated communities including Aboriginal and railway settlements.*

The Proposed Development is considered consistent with objectives (b) and (c) of the 'Rural Zone'. This is because the Proposed Development is for the provision of additional infrastructure to ensure the continuation of the existing facility, which is a component of a larger mining operation/activity.

The NKS Use Class is considered as 'Industry – Extractive', defined in the LPS1 as:

'an industry which involves the extraction of sand, gravel, clay, turf, soil, rock, stone, minerals, or similar substance from the land, and also the storage, treatment or manufacture of products from those materials as extracted or on land adjacent thereto'.

This planning application is not seeking to change the approved land use. Development Standards for individual land use classifications are detailed in Table 2 of the LPS1. The Proposed Development consideration of the Development Standards applicable to the Industry – Extractive are detailed in Table 2.

Table 2 demonstrates the Proposal adequately addresses the applicable development requirements, and therefore BHP NiW considers approval under LPS1 is warranted.

6.3 City of Kalgoorlie-Boulder Local Planning Scheme No. 2

Pursuant to the City's draft Local Planning Scheme No. 2 (Draft LPS2) that was released for advertising, the subject land is proposed to be included in the 'General Industry' zone. The objectives for this zone are provided in Table 3 of the Draft LPS2 and state as follows:

- *To provide for a broad range of industrial, service and storage activities which, by the nature of their operations, should be isolated from residential and other sensitive land uses;*
- *To accommodate industry that would not otherwise comply with the performance standards of light industry;*
- *Seek to manage impacts such as noise, dust and odour within the zone;*

Draft LPS2 includes a land use classification of 'Mining Operations' which is defined as:

'premises where mining operations, as that term is defined in the Mining Act 1978 section 8(1) is carried out.'

The relevant definition from the *Mining Act 1978 (WA)* is as follows:

'mining operations means any mode or method of working whereby the earth or any rock structure stone fluid or mineral bearing substance may be disturbed removed washed sifted crushed leached roasted distilled evaporated smelted combusted or refined or dealt with for the purpose of obtaining any mineral or processed mineral resource therefrom whether it has been previously disturbed or not and includes —

- (a) the removal of overburden by mechanical or other means and the stacking, deposit, storage and treatment of any substance considered to contain any mineral; and*
- (b) operations by means of which salt or other evaporites may be harvested; and*
- (c) operations by means of which mineral is recovered from the sea or a natural water supply; and*
- (da) operations by means of which a processed mineral resource is produced and recovered; and*
- (d) the doing of all acts incident or conducive to any such operation or purposes;'*

BHP NiW considers the above definition is an appropriate classification of the existing operations. This planning application is not seeking to change the approved land use as it is only seeking approval for the provision of additional infrastructure to the existing operations.

BHP NiW considers the existing operations are aligned with the proposed zone objectives as the operations are of an industrial nature that should be isolated from residential and other sensitive land uses, and therefore would not fall under the ambit of 'Light Industry'.

The primary emission risk from the Proposed Development is air pollution potentially resulting in impacts to air quality in surrounding areas. This risk is considered adequately addressed by design and regulated by DWER through the Works Approval and Licence Amendment processes.

Air emissions from construction activities are expected to be inconsequential. BHP NiW will utilise existing waste management vendors and manage construction waste in accordance with existing NKS waste management practices.

The table below addresses the applicable/relevant requirements contained in Schedules 2 to 10 of the Draft LPS2. BHP NiW considers the Proposed Development adequately complies with the applicable development requirements of the Draft LPS2.

Table 3: Draft LPS2 Development Standards for Mining Operation

Requirement	Proposed Development
-------------	----------------------

Maximum Plot Ratio: 0.8	A specific plot ratio calculation of all existing and Proposed Development has not been undertaken but is considered to be substantially below the maximum 0.8 allowed due to the large size of the lot.
Minimum Setbacks Average Front: 3m Side: - Rear: -	The Proposed Development is to be located centrally in the NKS site operation, and therefore not within 3m of the site frontage. A portion of the Proposed Development, where the conveyor connects to the Concentrate Storage Shed, will be adjacent to the West Kalgoorlie Esperance Railway corridor. Notification to the railway operator, Arc Infrastructure, will be undertaken prior to commencing works.
Landscaping: Minimum 10% of site area	The subject land arguably does not have a 'street frontage', the existing development on-site is devoid of dedicated landscaping. In accordance with clause 34(2) of the Draft LPS2, BHP NiW considers the Council should approve the application, despite it not complying with the landscaping requirement, as the waiver of that requirement will not have a significant adverse effect on the occupiers or users of the development, the inhabitants of the locality or the likely future development of the locality (clause 34(5)(b)). This is because the subject land is relatively isolated and the Nickel Concentrate Dryer proposed as part of the Proposed Development will not be visible or accessible by the public.
Building Height: Overall: 20m Wall: 12m	The tallest component of the Proposed Development is the Concentrate Dryer Vent Stack which has a height of 45 m (Figure 5). It is noted that clause (2)(h) of Subject 3 in Schedule 5 of Draft LPS2 allows for some mining related structures to exceed the prescribed heights. Furthermore, the Proposed Development is in harmony with the existing buildings/use and therefore would not detract from the visual amenity of the locality.
Stormwater: Stormwater to be discharged to a point to the satisfaction of the local government	Rainfall that is captured within the Proposed Development area will be directed to existing stormwater infrastructure and not discharged to the environment (Appendix 3 – Water Management Report).
Parking: 1 per employee	There is no increase in staff as a result of the proposal and therefore no change to the existing/approved parking requirements.

6.4 State Planning Policy 3.7: Planning in Bushfire Prone Areas

The Proposed Development is situated outside of the designated bushfire prone area as per the *Western Australia State Map of Bush Fire Prone Areas* (DFES 2021). However, a bushfire assessment and management plan has been completed by an accredited bushfire consultant (EcoLogical 2022; Appendix 4 – Bushfire Attack Level Assessment). The bushfire consultant undertook a Method 1 Bushfire Attack Level ('BAL') Assessment for the Proposed Development. Based on the site assessment and BAL assessment, the Proposed Development achieves a BAL rating of BAL-12.5.

EcoLogical (2022) concluded that the Proposed Development is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is therefore recommended for planning approval.

6.5 Planning and Development (Local Planning Schemes) Regulations 2015

Pursuant to regulation 10(4) of the *Planning and Development (Local Planning Schemes) Regulations 2015* (WA) ('LPS Regulations'), the provisions in Schedule 2 are deemed provisions that are applicable to all local planning schemes, regardless of whether the provisions are incorporated into the scheme text.

Specifically, clause 67(2) of the Deemed Provisions outline the matters to be given due regard, where relevant, in considering an application for planning approval. An assessment of the Proposal against these considerations is provided in Table 4.

Table 4: Deemed Provisions given due regard.

Matter to be Considered	Response
(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;	The Proposal is not seeking a change to the existing land use on-site which has previously been considered by the City as 'Industry – Extractive' and is only seeking approval for additional infrastructure. Furthermore, the Proposal remains consistent with the zone objectives and addresses all relevant development requirements set out in LPS1 (aside from landscaping, discussed above).
(b) the requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;	Pursuant to the City's Draft LPS2, the zoning of the site is proposed to become 'General Industry'. Whilst the Proposal is not seeking a change in land use, Draft LPS2 does provide a more suitable classification of 'Mining Operations'. The Proposal remains aligned to the objectives of the 'General Industry' zone and is only seeking approval for the Proposed Development (i.e. Concentrate Dryer). The proposal is also considered to address the applicable development requirements of Draft LPS2 (aside from landscaping, discussed above).
(c) any approved State planning policy;	The Bushfire Management Plan (EcoLogical 2022) outlines management measures ensuring the ongoing protection of life and property assets and is consistent with the aim and objectives of SPP 3.7 (Error! Reference source not found.).
(d) any environmental protection policy approved under the <i>Environmental Protection Act 1986</i> section 31(d);	BHP NiW is planning to submit a works approval application to DWER for the Proposed Development.
(g) any local planning policy for the Scheme area;	In preparing this application, consideration was given to <i>Local Planning Policy 05 – Development in Rural Zones</i> , however, it was not considered relevant as the Proposed Development is not for a residential,

Matter to be Considered	Response
(m) the compatibility of the development with its setting, including — the compatibility of the development with the desired future character of its setting; and the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;	commercial, industrial or recreational activity that would otherwise be appropriate in an urban area. The Proposed Development is seeking approval for additional infrastructure. There is no change in the land use/activity and no increase in staff on-site or vehicular movements. The tallest component of the Proposed Development is the Concentrate Dryer Vent Stack which has a height of 45 m (Figure 5). However, it is noted that clause (2)(h) of Subject 3 in Schedule 5 of Draft LPS2 allows for some mining related structures to exceed the prescribed heights. Furthermore, the Proposed Development is in harmony with the existing industrial infrastructure, buildings and use, and is therefore compatible with its setting.
(n) the amenity of the locality including the following – environmental impacts of the development; the character of the locality; social impacts of the development;	The Proposed Development is not seeking any change to the approved land use and activity on-site. There will be no increase in the number of staff on-site or the number of vehicular movements. The operations remain consistent with the zone objectives of both LPS1 and Draft LPS2. With regards to potential environmental impacts, this application is supported by a Noise Assessment, Stormwater Assessment and Bushfire Management Plan, identifying that the Proposed Development is unlikely to result in any significant environmental impact. Furthermore, a works approval application will be lodged with DWER which will further address any potential environmental impacts.
(s) the adequacy of – the proposed means of access to and egress from the site; and arrangements for the loading, unloading, manoeuvring and parking of vehicles	The Proposal will not be increasing the number of staff on-site, however, an increase in the number vehicular movements will be required to deliver the Nickel concentrate. Existing access, parking, loading and manoeuvring areas remain adequate to support an increase in vehicular movement within the NKS facility.
(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;	There may be a temporary increase of traffic movements during the construction phase. However, given the temporary nature, BHP NiW does not consider that this will have an adverse impact on the surrounding road system.

7. Conclusion

NiW is seeking planning approval for the construction and operation of a Concentrate Dryer (and conveyor) at NKS. This application for the described infrastructure does not seek to alter or change the existing authorised operations on-site.

Under LPS1, and the advertised Draft LPS2, the Proposed Development aligns with the relevant zone objectives and relevantly adheres to the applicable development requirements of both schemes in relation to site cover and building height. The Proposed Development is consistent with current NKS site practices in relation to required site cover, building height and setbacks. Accordingly, BHP NiW considers approval is warranted.

This application is further supported by a Noise Assessment, Stormwater Assessment and BAL Assessment, which demonstrates the Proposed Development's suitability in those respects. As stated, a Works Approval application will be submitted to DWER for approval of the Proposed Development in accordance with the EP Act.

As the information contained within this proposal is compliant with the relevant planning framework, approval is sought to commence works.

Appendix 1 – Certificate of Title

Appendix 2 – Noise Assessment

Appendix 3 – Water Management Report

Appendix 4 – Bushfire Attack Level Assessment

WESTERN



AUSTRALIA

DUPLICATE CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

REGISTER NUMBER 100/DP212288	
DUPLICATE EDITION 1	DATE DUPLICATE ISSUED 19/5/2022

VOLUME
1670FOLIO
313

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 100 ON DEPOSITED PLAN 212288

REGISTERED PROPRIETOR: (FIRST SCHEDULE)

BHP NICKEL WEST PTY LTD OF PO BOX 8301 PERTH BC WA 6849

(AN P110201) REGISTERED 13/4/2022

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1. THE LAND THE SUBJECT OF THIS CERTIFICATE OF TITLE EXCLUDES ALL PORTIONS OF THE LOT DESCRIBED ABOVE EXCEPT THAT PORTION SHOWN IN THE SKETCH OF THE SUPERSEDED PAPER VERSION OF THIS TITLE.
2. C803417 EASEMENT TO THE STATE ENERGY COMMISSION OF WESTERN AUSTRALIA. SEE SKETCH ON VOL 1670 FOL 313. REGISTERED 29/6/1984.
3. F924685 EASEMENT TO STATE OF WESTERN AUSTRALIA. SEE DEPOSITED PLAN 218838. RECORDED 10/7/1995.
M769588 NOTIFICATION. THE GRANTEEES OF EASEMENT F924685 ARE NOW ALINTA ENERGY GGT PTY LTD, SOUTHERN CROSS PIPELINES AUSTRALIA PTY LTD AND SOUTHERN CROSS PIPELINES (NPL) AUSTRALIA PTY LTD. PURSUANT TO SECTION 20(5) OF THE PETROLEUM PIPELINES ACT 1969. RECORDED 16/9/2014.
4. G277418 EASEMENT TO WESTERN MINING CORPORATION LTD. SEE DEPOSITED PLAN 219047. REGISTERED 12/9/1996.
G999952 NOTIFICATION. THE GRANTEEES OF EASEMENT G277418 ARE NOW SOUTHERN CROSS PIPELINES AUSTRALIA PTY LTD. PURSUANT TO S20(5) OF THE PETROLEUM PIPELINES ACT 1969. LODGED 12/1/1999.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.

-----END OF DUPLICATE CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

END OF PAGE 1 - CONTINUED OVER



RECORD OF CERTIFICATE OF TITLE

REGISTER NUMBER: 100/DP212288

VOLUME/FOLIO: 1670-313

PAGE 2

SKETCH OF LAND: 1670-313 (100/DP212288)

PREVIOUS TITLE: 1449-619

PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.

LOCAL GOVERNMENT AUTHORITY: CITY OF KALGOORLIE-BOULDER

This certificate of title is a valuable document that is protected by overt and covert security features, including a thermochromic icon on the front of this document.
To test, gently rub the icon. The icon should momentarily disappear then return.
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WA 1324673



Kalgoorlie Nickel Smelter

Concentrate Dryer Project Environmental Noise Assessment

BHP

Prepared for BHP Nickel West

7 March 2023

Project Number: TN20062-2

DOCUMENT CONTROL					
Version	Description	Date	Author	Reviewer	Approver
0	Draft – issued for internal review	8/12/2022	LA	GB	
1	First issue	15/12/2022	LA		GB
2	Second Issue	02/03/2023	LA		GB

Executive Summary

BHP Nickel West (BHP NIW) operates the Kalgoorlie Nickel Smelter (NKS) in Kalgoorlie WA and is planning to undertake staged upgrades to NKS to improve production consistency and allow for future capacity uplift.

This report details the environmental noise assessment undertaken for the Concentrate Dryer Project (the Project).

From the modelling and analysis undertaken, the environmental noise assessment has concluded that the upgraded facility (existing facility plus Concentrate Dryer Project) complies with the assigned noise levels at all receivers during all times of day, evening and night.

As a result, no noise mitigation is required or proposed for the Project.

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Figures in Appendices

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Appendices

APPENDIX A Noise Source Levels

1 Introduction

1.1 Overview

BHP Nickel West (BHP NiW) are undertaking staged upgrades to the Kalgoorlie Nickel Smelter (NKS) to improve production and allow for future staged capacity uplifts. There are several discrete work packages which will be undertaken.

1.2 Aim

The aim of this report is to assess the noise impacts of the Project on the nearest noise sensitive receivers against the Environmental Protection (Noise) Regulations 1997.

1.3 Scope

This report is limited to the Concentrate Dryer Project (the Project) upgrades and does not include other staged upgrades which will occur in the future.

1.4 Applicable Documents

- [1] Environmental Protection Act 1986.
- [2] Environmental Protection (Noise) Regulations 1997.
- [3] DWER Draft Guideline “Assessment of environmental noise emissions”, May 2021.
- [4] Talis Report TN20062-1 BHP NiW NKS Upgrades Noise Assessment, April 2021.
- [5] Talis Briefing Note TN22025-1 BHP NiW Kalgoorlie Smelter Noise Assessment and Validation.

2 Project Overview

2.1 Existing Facility

NKS is located approximately 8km South of Kalgoorlie WA (see Figure 2-1). The facility has been operational since 1973, producing granulated nickel matte containing about 68% nickel. The raw dry concentrate product is trucked from BHP NIW operations at Kambalda and Leinster to the smelter for processing.

NKS operates 24 hours a day, 7 days a week. As a result, the facility noise emissions must comply with the most stringent night-time assigned noise levels defined in the Environmental Protection (Noise) Regulations 1997 [2].

The existing facility comprises various areas with each area containing noise generating equipment. The layout of the areas, and the noise sources contained in each area are described in section 4.4.

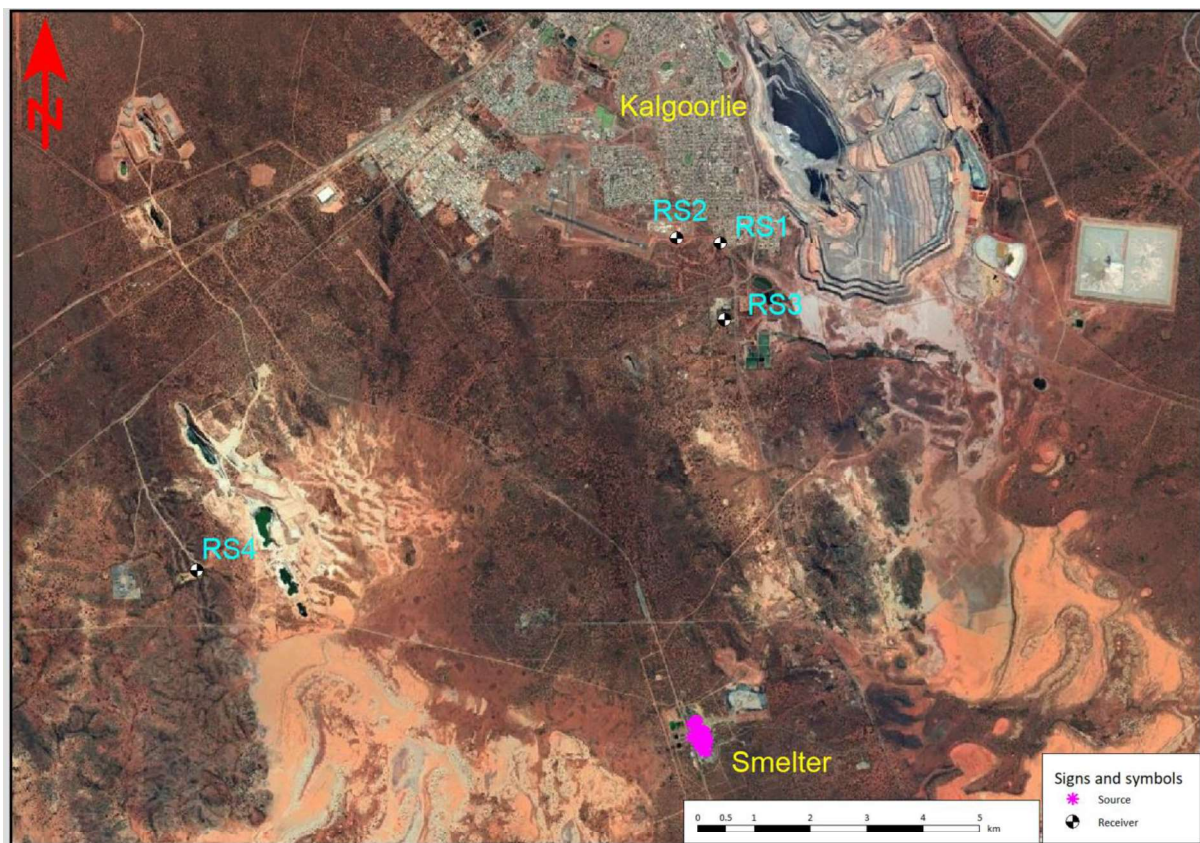


Figure 2-1 Kalgoorlie Smelter Plant – Location

2.2 Concentrate Dryer Project

The new Concentrate Dryer will be installed on the Western side of NKS within the existing footprint of the NKS facility. The location and layout of the Project is shown in Figure 2-2 to Figure 2-4.

The Project will include a product storage shed, front end loader, conveyors, dryer package, baghouse, fans, pumps and silos.

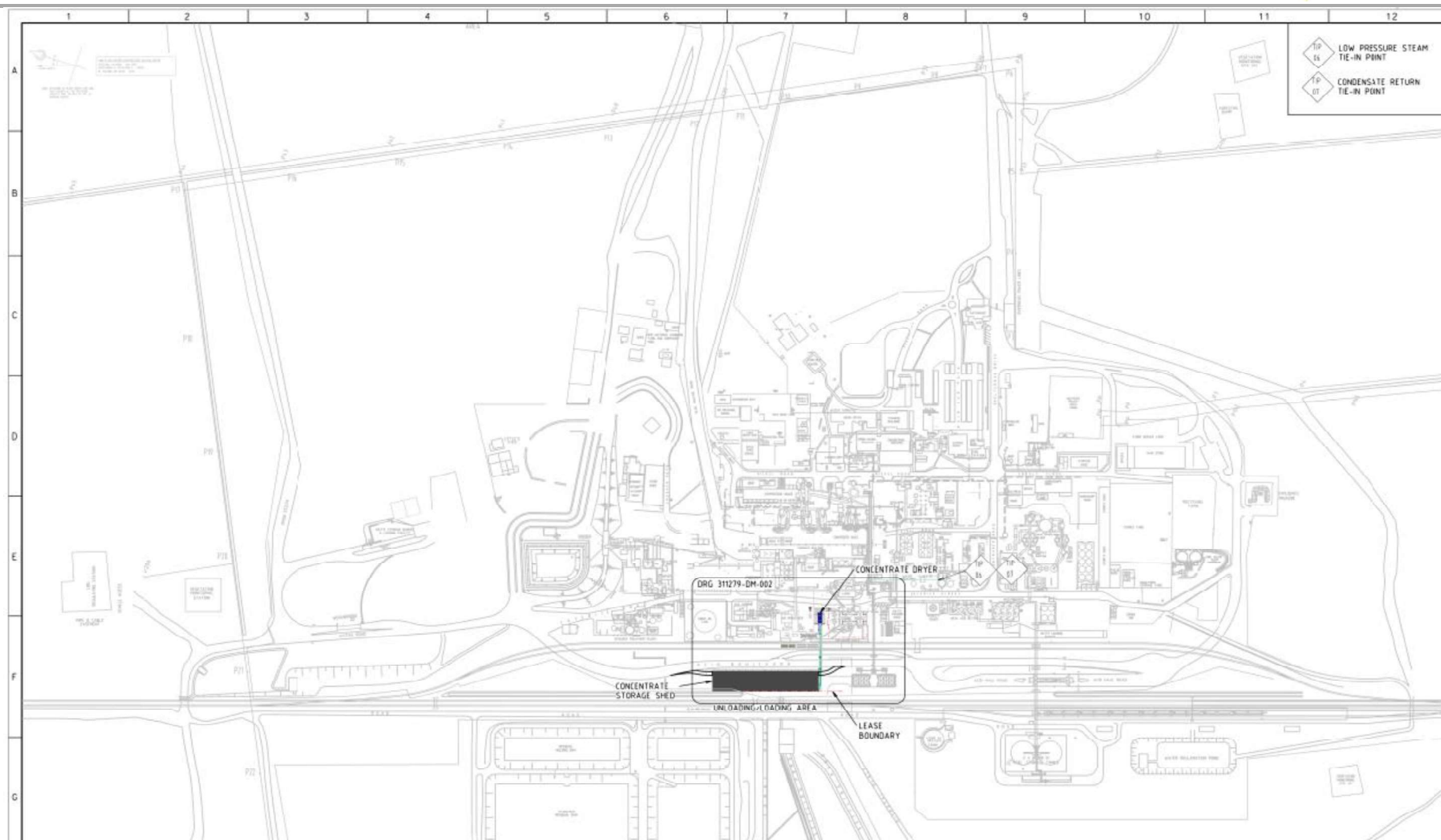


Figure 2-2 Location of Concentrate Dryer Project within the existing facility

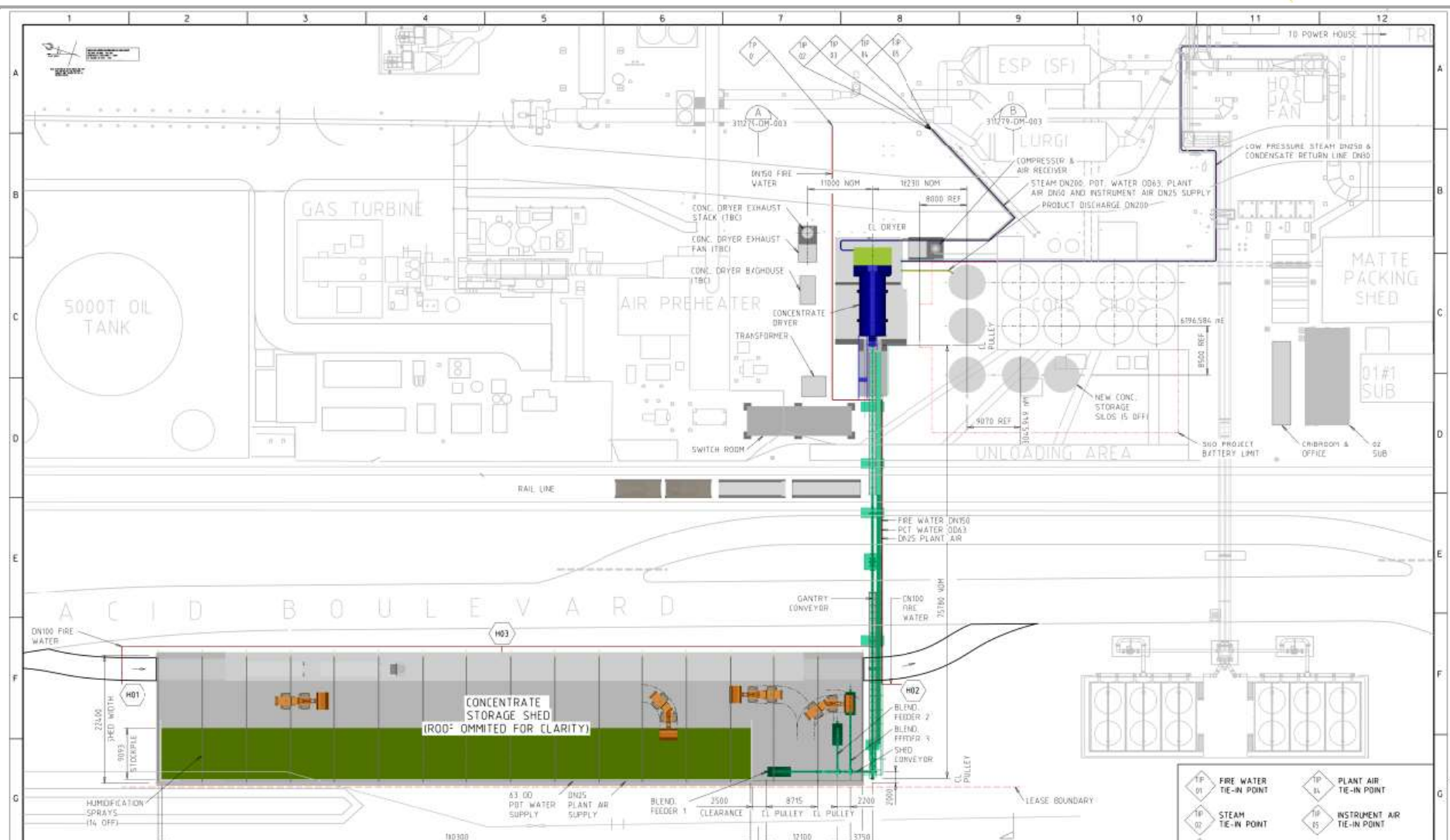


Figure 2-3 Location of Concentrate Dryer Project (zoomed in)

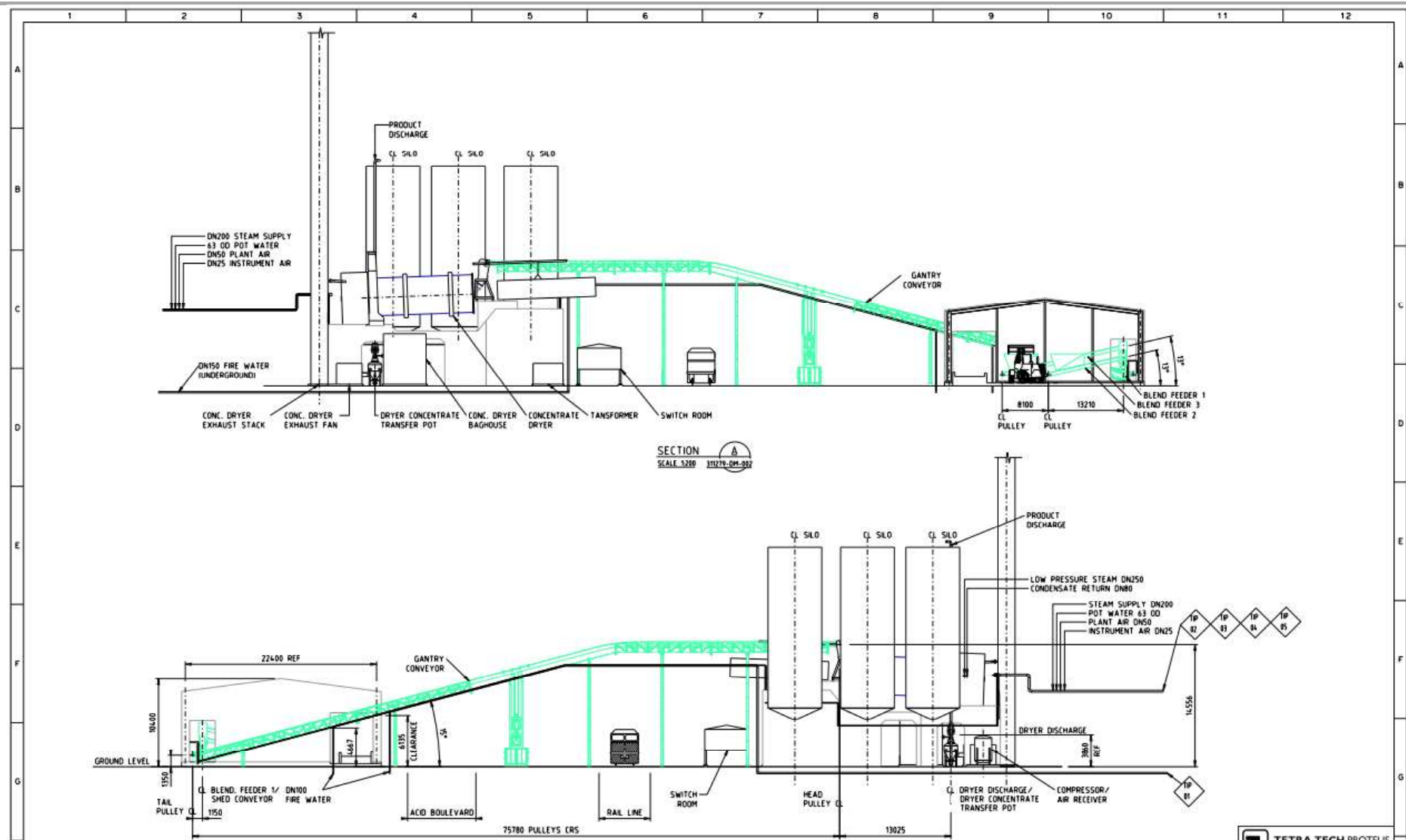


Figure 2-4 Concentrate Dryer Project Elevation View

3 Assessment Criteria

3.1 Environmental Protection (Noise) Regulations 1997

Noise management in Western Australia is implemented via the Environmental Protection (Noise) Regulations 1997 (the Regulations), which operate under the Environmental Protection Act 1986.

The Regulations define maximum allowable noise levels, termed assigned level, which apply to noise received at noise sensitive premises, such as residential areas. These are determined by a combination of a base noise level plus an Influencing Factor (IF).

The assigned noise levels include L_{A1} , L_{A10} and L_{AMAX} noise parameters, defined as:

- L_{ASMAX} means an assigned level which is not to be exceeded at any time.
- L_{AS1} means an assigned level which is not to be exceeded for more than 1% of time.
- L_{AS10} means an assigned level which is not to be exceeded for more than 10% of time.

For noise sensitive premises, the time of day also affects the assigned noise levels. As the facility and proposed upgrades operate 24 hours a day, 7 days a week, noise emissions have been assessed against the most stringent night-time assigned levels (10pm-7am).

3.2 Assigned Noise Levels

Table 3-1 presents the assigned noise levels defined in the Regulations.

Table 3-1 Environmental Protection (Noise) Regulations - Assigned Noise Levels

Sensitive Receiver	Time of day	Assigned Levels (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise Sensitive Premises	0700 to 1900 hours Monday to Saturday	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sundays and public holidays	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + influencing factor	45 + influencing factor	55 + influencing factor
Boundary	all times	65	80	90

3.2.1 Influencing Factors

The Influencing Factor (IF) is calculated based on the surrounding land use adjacent to each of the noise sensitive receivers, including the amount (%) of industrial and commercial premises as well as the number and proximity of major and secondary roads.

The majority of residential properties at the Southern edge of the Boulder area are not located within 450m of industrial area, commercial area or major roads. As a result, an influencing factor of zero (**IF=0**) has been applied to all receivers assessed in this study.

3.2.2 Non-Significant Contributor

The Regulations require that *“noise emitted from any premises when received at other premises must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind”*.

A noise emission is taken to significantly contribute to a level of noise if the noise emission exceeds a value which is 5 dB below the assigned level at the point of reception.

This means that received noise from the proposed facility must not exceed a level which is 5 dB below the assigned level. As the assessed receivers are affected by other industrial premises, the facility including the upgrades must not significantly contribute to an exceedance at any of the receivers and as a result a -5 dB non-significant contributor penalty to the assigned level has been applied. As a significant contributor penalty has been applied no adjustment has been made for characteristic noise

3.2.3 Applicable Noise Criteria

The applicable night-time LA10 assigned levels used for this assessment, including influencing factors, penalties and adjustments are provided in Table 3-2.

Table 3-2 Applicable Night-time Assigned LA10 Levels

Receiver	Base LA10 Assigned Level	Adjustments (Significant Contributor)	Applicable LA10 Assigned Level
RS1	35	-5	30
RS2	35	-5	30
RS3	35	-5	30
RS4 (Lake Douglas Campground)	35	0	35

4 Noise Modelling Overview

4.1 Approach

A desktop noise model has been developed for the existing NKS operations, which forms the base case for future upgrades. The following modelling approach has been used in this study:

- **Current Operations (Base Case)** – A model representing existing NKS operations which will be used as a basis for comparison and compliance of any future proposed upgrade works.
- **Upgraded Facility (Cumulative Noise Impacts)** – noise emissions from the upgraded facility (i.e. Base Case plus the Project), does not result in an exceedance of the assigned levels.

4.1.1 Base Case Model

An initial noise model for the NKS facility was developed in April 2021 (see Talis report TN20062-1 [4]). In July 2022, site-based noise measurements were undertaken including equipment Sound Power Level (SWL) measurements and far-field model validation monitoring. The purpose of those measurements was to measure major equipment noise sources and to update the noise model with measured levels, as well as to validate the accuracy of the noise model [5].

The base model used for the concentrate dryer noise assessment is the updated and validated noise model. The model contains all elements within the existing NKS facility.

4.2 Modelling Software

A desktop environmental noise model was created to simulate the NKS operations using SoundPlan v8 software. This software package calculates sound pressure levels at nominated receiver locations and produces noise contours over a defined area of interest. SoundPlan can be used to model different types of noises, such as industrial noise, traffic noise and aircraft noise.

The inputs required by the SoundPlan modelling software are noise sources, topography, ground absorption, meteorological data and sensitive receiver locations. SoundPlan utilises ISO9613 for calculating the attenuation of sound during outside propagation in combination with CONCAWE^{1,2}.

The model has been used to predict received noise levels at noise sensitive receiver locations and to generate noise contour maps for the wider area.

¹ CONCAWE (Conservation of Clean Air and Water in Europe) was established in 1963 by a group of oil companies to carry out research on environmental issues relevant to the oil industry.

² The propagation of noise from petroleum and petrochemical complexes to neighbouring communities, CONCAWE Report 4/81, 1981.

4.3 Model Inputs

4.3.1 Noise Sources

Noise source Sound Power Levels (SWLs) for the Project have been calculated using data provided by BHP NIW (including equipment lists, layout drawings and engineering data) and Talis data including measurements of similar equipment types.

A summary of the SWL's allocated to the Project is summarised in Table 4-1. Detailed information including spectral data for each source and SWLs for the existing facility can be found in Appendix A.

Table 4-1 SWL's applied to the model for Project equipment

Noise Source	Quantity	SWL (dBA)
Baghouse Drives	2	94
Conveyors (Shed and Gantry)	2	80 / metre
Conveyor Drives (each)	2	104
ID Fan	1	105
Pump	1	95
Front End Loader	1	112
Shed (blending feeders)	1	113
Dryer	1	106
Dryer Pipe Work	1	105
Dryer Exhaust Fan	1	107

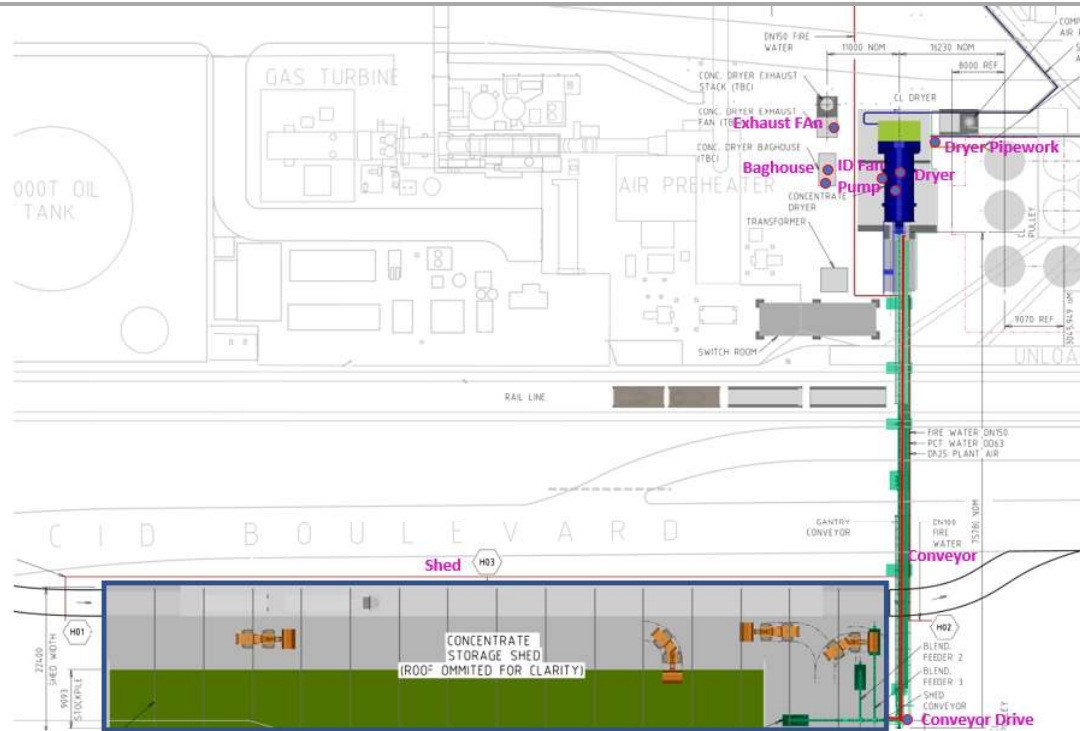


Figure 4-1 Model Layout

4.3.2 Noise Sensitive Receivers

The NKS facility is surrounded by primarily rural land, with the nearest Township at Kalgoorlie Boulder located approximately 8km North of the facility.

Four (4) noise sensitive receivers have been included in the noise model (RS1 to RS4) shown in Figure 2-1. These receivers have been included in the model as they are the closest sensitive receivers representing various parts of the community. These locations are consistent with previous noise assessments.

The applicable assigned L_{A10} night-time noise level for each receiver, including adjustments and penalties, is presented in Table 3-2, which are also shown in Figure 2-1.

Table 4-2 Noise sensitive receiver locations

Reference	Description	GPS Location (UTM MGA94, Zone 50)	
		Northing	Easting
RS1	Kalgoorlie Boulder	6592236	355410
RS2	Petrol Station	6592328	354640
RS3	Kalgoorlie Boulder	6590876	355485
RS4	Lake Douglas Campground	6586429	346141

4.3.3 Topography and Ground Absorption

Topographical information for the noise model was provided by BHP NIW, which was imported into the noise model to create a Digital Ground Map (DGM).

The acoustic properties of the ground influences the propagation of noise. Flat non-porous surfaces such as concrete, asphalt and water are more reflective whereas soft, porous surfaces such as foliage and grass are more absorptive.

For CONCAWE, the ground factor (G) varies from 1 (totally absorptive) to 0 (totally reflective). A ground factor of 0.6 was applied to the model for the facility (i.e. near-field) and 0.8 was applied to the model in the far-field. CONCAWE is a conservative algorithm and is accepted by the Department of Water and Environment Regulation (DWER).

4.3.4 Meteorological Conditions

SoundPlan has a range of different algorithms that can be used to calculate noise levels for user defined meteorological conditions. The CONCAWE algorithm has been used for this assessment.

Table 4-3 presents the worst-case night-time meteorological conditions applied to the model, which are defined in the Department of Water and Environment Regulation (DWER) "Draft Guideline on Environmental Noise for Prescribed Premises".

Table 4-3 Weather conditions applied to the model

Temperature (°C)	Relative Humidity (%)	Wind Speed (m/s)	Wind Direction	Pasquil Stability Class (PSC)
15	50	3	Worst case (source to receiver)	F

4.4 Noise Modelling Setup

The noise model has been setup to include the existing facility and proposed Project, and run with all equipment running simultaneously (i.e. operational worst case) and under worst case meteorological conditions described in Table 4-3.

5 Noise Modelling Results

5.1 Summary of Results

Table 5-1 presents the noise model results for the Project. As can be seen from the results, the upgraded facility complies with the assigned noise levels at all receivers.

Table 5-1 Noise Model Results (LA10)

Receiver	Assigned LA10 Level	Model Prediction LA10 Noise Level		Compliant (Y/N)	Δ updated model minus existing model
		Base Case	Base Case + Project		
RS1	30	13.4	13.9	Y	+0.5
RS2	30	13.4	13.9	Y	+0.5
RS3	30	16.8	17.1	Y	+0.3
RS4	35	12.7	13.1	Y	+0.4

5.2 Noise Contour Maps

Figure 5-1 shows a noise contour map for the upgraded facility.

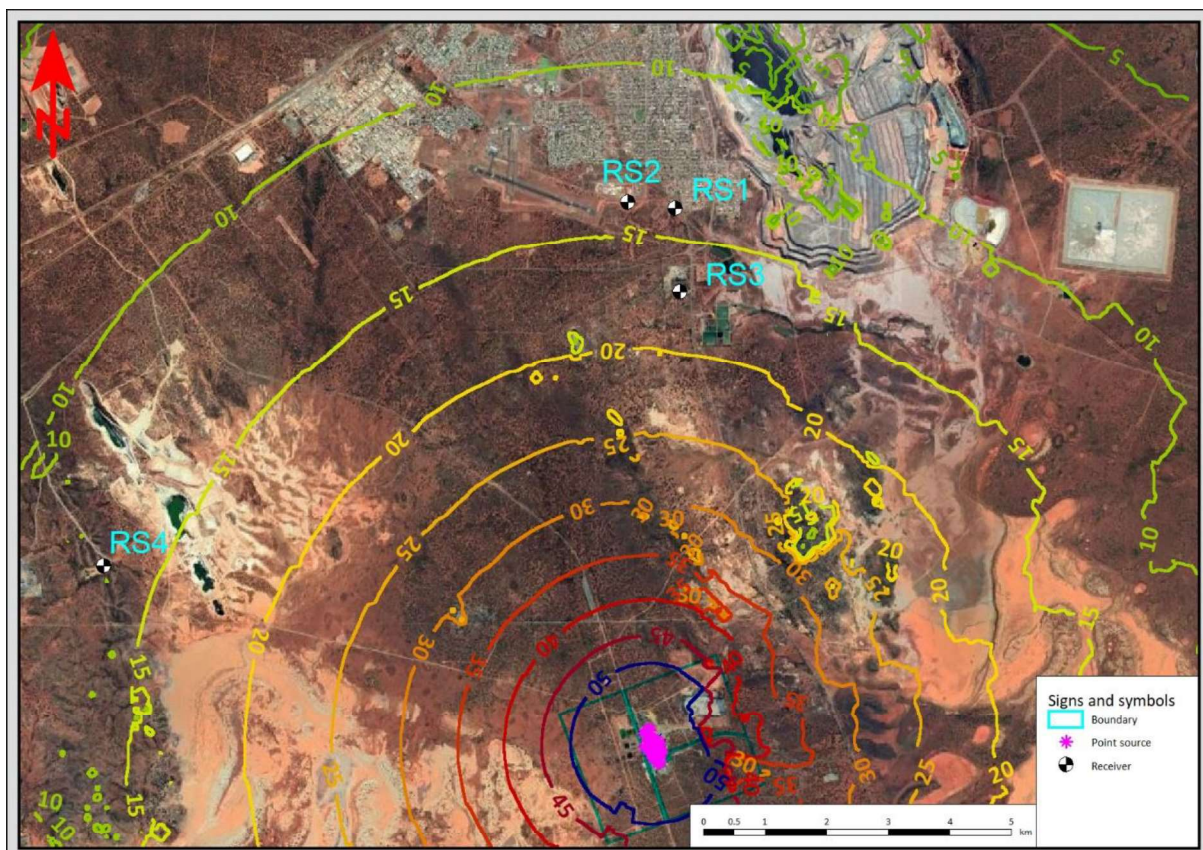


Figure 5-1 Noise Contour Map

6 Conclusions

The noise modelling and analysis has shown that the upgraded facility (existing facility + Concentrate Dryer Project) complies with the assigned noise levels at all times of day.

As such, no noise mitigation is proposed for the Project.

APPENDIX A

Noise Source Levels

Noise Source	Octave Bands (dBA)									SWL (dBA)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
Cooling Tower Pump A	69.4	75.1	83.3	86.6	91.7	91.9	89.5	78.6	64.4	96.7
Cooling Tower Pump B	69.4	75.1	83.3	86.6	91.7	91.9	89.5	78.6	64.4	96.7
Turbo Compressor Shed - Air In	75.2	82.9	88	87.4	97.6	101.8	98.6	90	77.7	104.9
ACC Fan #1	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
ACC Fan #2	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
ACC Fan #3	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
ACC Fan #4	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
ACC Fan #5	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
ACC Fan #6	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Acid Oxidation Plant	87	91.6	101.7	104.2	106	108.7	105.5	100.2	83.5	113.1
Acid Plant Blower #1	70	86	92.4	103.4	106.6	106.2	93.9	75.9	62.6	110.6
Acid Plant Blower #2	70	86	92.4	103.4	106.6	106.2	93.9	75.9	62.6	110.6
Acid Plant Blower House - Air intake	60.5	68.5	90.5	102.2	104	101.2	92.8	81.8	67.3	107.7
Ball Mill Drive	81.3	97.5	98.8	101.2	105.3	105.7	98.9	84.2	65.7	110.2
Bin Chute	69.9	79.2	81.8	85.2	87.7	88.5	84.9	74	60.2	93.5
Compressor #1	78.7	86.2	93	96.9	97.9	97.6	94.7	90.5	78.5	103.7
Compressor #2	78.7	86.2	93	96.9	97.9	97.6	94.7	90.5	78.5	103.7
Compressor #3	78.7	86.2	93	96.9	97.9	97.6	94.7	90.5	78.5	103.7
Compressor #4	78.7	86.2	93	96.9	97.9	97.6	94.7	90.5	78.5	103.7
Compressor House Outlet #1	73.1	89.7	96.6	94.2	98.9	106.2	102.2	96	83.4	109
Compressor House Outlet #2	73.1	89.7	96.6	94.2	98.9	106.2	102.2	96	83.4	109
Converter	81.1	89.7	98.4	108	123.4	128.3	128.9	124.4	113.7	132.9
Converter Secondary fan	79.8	93.1	94.1	93	93.8	94	89.5	80	64.3	101
Cooling fans3	70.3	81.8	99.6	104.7	110.9	104.4	98.7	95.5	80.6	113
Cooling Tower #1	74.1	88.4	94.9	98.5	98.5	94.1	88.7	84.1	72.9	103.3
Cooling Tower #2	74.1	88.4	94.9	98.5	98.5	94.1	88.7	84.1	72.9	103.3
Cooling Tower #3	74.1	88.4	94.9	98.5	98.5	94.1	88.7	84.1	72.9	103.3
Cooling Tower #4	74.1	88.4	94.9	98.5	98.5	94.1	88.7	84.1	72.9	103.3
Cooling tower Fan	74.1	88.4	94.9	98.5	98.5	94.1	88.7	84.1	72.9	103.3
Crusher Conveyor Drive	77	89.1	105.6	101.8	101.8	98.5	96.6	85.5	73.3	109
Crusher Drive + Pully Arrangement	69.7	81.2	87.1	90	94.2	94.2	91	84.3	66.2	99.3
Crusher Vent Fan #1	59.6	65.6	84	86.3	89.6	90	82.6	72.3	58.6	94.5
Crusher Vent Fan #2	59.6	65.6	84	86.3	89.6	90	82.6	72.3	58.6	94.5

Noise Source	Octave Bands (dBA)									SWL (dBA)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
Dry Precipitation Sonic Boom Horn	64.9	103.9	99.8	97.6	95.8	89.6	85.1	77	67.9	106.5
Effluent Treatment Area	70	82.1	98.6	94.8	94.8	91.5	89.6	78.5	66.3	102
Fan Drive #1	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #2	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #3	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #4	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #5	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #6	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #7	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #8	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #9	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Fan Drive #10	72.9	83.2	86.6	84.8	83.5	83.7	75.6	66.8	54.9	91.7
Flush Pump #1	65.8	73.2	80.7	86.9	91.2	88.7	83.7	74.8	60.6	94.7
Flush Pump #2	65.8	73.2	80.7	86.9	91.2	88.7	83.7	74.8	60.6	94.7
Furnace Area	86	97	110.1	108.7	107.5	111.5	110.9	110.5	95.5	117.9
Halide Tower Pump #1	61.9	76.5	89.2	90.8	88.2	85.9	80.3	72.9	62.9	95.1
Halide Tower Pump #2	61.9	76.5	89.2	90.8	88.2	85.9	80.3	72.9	62.9	95.1
Halide Tower Pump #3	61.9	76.5	89.2	90.8	88.2	85.9	80.3	72.9	62.9	95.1
Hot Gas Fan	69.7	72.9	78.3	81.5	81.7	84.7	80.5	73	61.4	89.1
HP Piping	78.2	85.3	89.1	98	111.5	110.7	107.6	92.5	76.7	115.1
Lab Dust Collector	67.4	79.1	82.8	83.7	82.7	80.9	76.4	67.4	50.6	89.4
Outlet Small #1	61.4	75.1	81.3	89.7	83.6	80.1	74.9	67.9	49.7	91.7
Outlet Small #2	61.4	75.1	81.3	89.7	83.6	80.1	74.9	67.9	49.7	91.7
Outlets Large	79.3	94.7	100.2	103	91.7	88.9	86	80.2	62.8	105.6
Power House Area	92.5	101.9	106.8	109.5	109.5	109.2	106.8	97.5	88.9	115.8
Power House Fan #1	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #2	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #3	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #4	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #5	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #6	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #7	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #8	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #9	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Power House Fan #10	66.7	77.9	84.6	85.3	88.3	84	77	66	48.1	92.2
Purge Air Fan #1	58.7	69.3	84.8	92.4	95.9	89.7	81.5	72.4	58	98.5
Reverse Jet Scrubber Pump #1	64.4	75.7	86.1	88.1	90	85.3	83.6	71.8	58.5	94.3
Reverse Jet Scrubber Pump #2	64.4	75.7	86.1	88.1	90	85.3	83.6	71.8	58.5	94.3
Reverse Jet Scrubber Pump #3	64.4	75.7	86.1	88.1	90	85.3	83.6	71.8	58.5	94.3
Smelter Level 1	86.2	99.8	103.8	111.5	110	106.6	103.6	103.3	96.6	115.7

Noise Source	Octave Bands (dBA)									SWL (dBA)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
Smelter Level 2	76.3	84.2	92	95.8	107.1	111.5	105.6	100.4	90.2	113.9
Smelter Level 3	70.5	82.2	89.8	92.7	97.7	104.5	110.3	112.9	107	115.9
Smelter Level 4	83.1	91.1	96.4	105.6	102.8	98.5	94.7	87.1	73.6	108.5
Smelter Level 5	73.5	81.2	87.1	91.3	100.6	103	93.6	81.9	68.1	105.5
Spray Cooler Water Pump A	58	65.4	72.6	78.2	84.7	83.1	79.3	69.5	60.9	88.4
Spray Cooler Water Pump B	58	65.4	72.6	78.2	84.7	83.1	79.3	69.5	60.9	88.4
Steam Header	64.9	73.8	84.6	92.9	99.5	101	94.5	86.4	70.7	104.3
Steam Vent	62.7	69	72.2	75.6	82.7	88.8	93.7	91	80.2	96.7
Trash Screen	69.9	79.2	81.8	85.2	87.7	88.5	84.9	74	60.2	93.5
Valve CWV01264	62.1	72	77.9	82.7	84	90.1	96.3	96.5	88.8	100.4
Water Pump #1	71.3	82.9	89.4	94	96.1	93.5	90.2	79.9	-	100.4
Water Pump #2	71.3	82.9	89.4	94	96.1	93.5	90.2	79.9	-	100.4
Concentrate Dryer Project										
Steam Dryer	93.7	89.5	94.8	97.9	99.9	98.5	100.8	91.7	74.5	106.3
Steam Dryer Pipe Work	68.2	75.3	79	88	101.6	100.7	97.6	82.5	66.8	105.2
Shed	84.5	100.6	104.6	107.1	107.6	104.1	97.1	91.1	-	112.6
Front End Loader	77.8	101.1	105.5	104.6	107.4	103.8	100.8	96.2	77.7	112.3
Pump	60.5	71.3	82.3	87.1	91.5	87.2	82.6	76.1	65.2	94.6
ID Fan	77	90.6	96.8	96.4	97	100.3	95.5	86.4	75.1	104.8
Conveyors (/m)	58.1	67.4	70.2	73.9	75.5	72.8	65.3	55.3	39.2	80.0
Conveyor Drives (each)	79.3	87.9	93.9	99.2	99.7	95.9	89.3	85.2	69.5	104.1
Baghouse Drives	73.1	82.6	87.2	89.2	86.9	82.8	83.8	76.9	64.5	94.1
Dryer Exhaust Fan	82.3	90.9	96.9	102.2	102.7	98.9	92.3	88.2	72.5	107.0



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BHP**Kalgoorlie Nickel Smelter****-**

WATER MANAGEMENT REPORT - ADDENDUM

Document Information

Document Number	
Former Document Number	
Description	Addendum to support the NKS Concentrate Dryer and Storage Shed development applications.
Next Review Date	
Page	1 of 6

Revision History

Version	Issue Date	Author & Position	Nature of Amendments
1.0	11 Oct 2022	Ross Perrigo (Lead Water Resources Engineer)	-
1.1	7 Nov 2022	Ross Perrigo (Lead Water Resources Engineer)	Adjustment for revised shed layout.
1.2	13 March 2023	Ross Perrigo (Principal Water Resources Engineer)	Adjusted to include drainage pit concept
1.3	3 April 2023	Ross Perrigo (Principal Water Resources Engineer)	Updated perimeter wall design

Document Owner Approval

Position	Name	Approval Date

Review Team

Position	Name	Endorsement Date

ADDENDUM – CONCENTRATE DRYER AND STORAGE SHED

This addendum has been prepared to accompany the Kalgoorlie Nickel Smelter (NKS) Water Management Report (WMR) prepared by Advisian (2021). The addendum supports the development application for the proposed Concentrate Dryer and Storage Shed, outlining the impacts on the existing stormwater management onsite.

Background

The NKS WMR outlines stormwater management principles onsite, including a summary of the guiding documents and definition of design criteria for management of frequent, minor, and major events. The report assessed the performance of the existing stormwater management system and determined that development of the proposed Oxygen Plant would have a negligible impact on the existing water management.

As outlined in the WMR, there are several infrastructure upgrades anticipated to increase production efficiency onsite. The proposed Concentrate Dryer and Storage Shed are included in these upgrades. Section 7.2 of the WMR includes the requirements for these future planning applications:

1. Description and map of the proposed development, including footprint and proposed infrastructure
2. Commentary on any modifications to the stormwater management system (outlined in Section 5)
3. Commentary on any modifications to the design criteria (and/or Licence conditions)
4. The latest annual compliance reporting (attached as an appendix)

This information is provided below.

1. Concentrate Dryer and Storage Shed background

The proposed Concentrate Dryer and Storage Shed facilities are located east of the Kalgoorlie-Esperance railway corridor, adjacent to the Furnace/Smelter (Figure 1). It consists of the following facilities:

- Concentrate Dryer
- Storage shed
- Additional pavement.

2. Stormwater management modifications

These facilities are located within the *Plant and Administration* catchment (29 ha) outlined in the the NKS WMR (Advisian 2021). The catchment is predominantly impervious (concrete and bitumen surfaces), with some areas of bare ground adjacent to the railway.

Stormwater within this catchment is conveyed by a network of underground pits and pipes, along with concrete channels and sediment traps. Flow is conveyed through this network under the railway to the North and South ponds. Water within these ponds is pumped to the Residue Dam facilities for recycling as process water, allowing for management of water levels.

The capacity of these ponds was assessed in the NKS WMR (Advisian 2021) based on the following assumptions:

- 35,000 m³ of available capacity for stormwater runoff storage (50% of the combined volume)
- Total catchment area of 29 ha
- Runoff coefficient of 80% (to account for impervious and pervious areas, losses and minor storage within the catchment).

The Advisian (2021) assessment identified that there was sufficient capacity for the retention of frequent and minor rainfall which minimises the risk of pollutants being mobilised offsite. Major rainfall events are generally contained within the ponds up to the 1% Annual Exceedance Probability (AEP) 12-hour event during typical conditions.

Construction of the Concentrate Dryer is likely to have no impact on the performance of the stormwater management system as it is located on an impervious portion of the catchment. The Storage Shed and associated pavement (0.31 ha) replaced previously bare ground, resulting in minor increase in impervious area within the catchment (29 ha).

To assess the minor increase in impervious area, the runoff coefficient in the previous assessment was increased to 0.81 (23.51 ha out of 29 ha). Results for the revised assessment are provided in Table 1 below,

for comparison with Table 6 in the NKS WMR (Advisian 2021). The North and South ponds are assumed to have 50% of the combined capacity available for runoff storage.

Table 1: Site runoff volumes (revised)

Duration	63.2% AEP	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP
30-min (Runoff Volume)	9.2 mm (2,167 m ³)	17.0 mm (3,996 m ³)	21.6 mm (5,078 m ³)	26.5 mm (6,230 m ³)	33.7 mm (7,922 m ³)	39.7 mm (9,333 m ³)
1-hour (Runoff Volume)	11.7 mm (2,750 m ³)	21.5 mm (5,054 m ³)	27.1 mm (6,371 m ³)	33.2 mm (7,805 m ³)	42.0 mm (9,873 m ³)	49.4 mm (11,613 m ³)
3-hour (Runoff Volume)	16.7 mm (3,926 m ³)	30.5 mm (7,170 m ³)	38.6 mm (9,074 m ³)	47.2 mm (11,096 m ³)	59.9 mm (14,081 m ³)	70.7 mm (16,620 m ³)
6-hour (Runoff Volume)	20.8 mm (4,890 m ³)	38.5 mm (9,051 m ³)	49.1 mm (11,542 m ³)	60.6 mm (14,246 m ³)	77.4 mm (18,195 m ³)	91.8 mm (21,580 m ³)
9-hour (Runoff Volume)	23.6 mm (5,548 m ³)	44.2 mm (10,390 m ³)	56.8 mm (13,352 m ³)	70.6 mm (16,597 m ³)	90.8 mm (21,345 m ³)	108 mm (25,389 m ³)
12-hour (Runoff Volume)	25.8 mm (6,065 m ³)	48.7 mm (11,448 m ³)	63.0 mm (14,810 m ³)	78.8 mm (18,524 m ³)	102 mm (23,978 m ³)	121 mm (28,445 m ³)
24-hour (Runoff Volume)	31.5 mm (7,405 m ³)	60.9 mm (14,316 m ³)	79.8 mm (18,759 m ³)	101 mm (23,743 m ³)	132 mm (31,030 m ³)	158 mm (37,142 m ³)*
48-hour (Runoff Volume)	37.3 mm (8,768 m ³)	73.1 mm (17,184 m ³)	96.8 mm (22,756 m ³)	124 mm (29,150 m ³)	162 mm (38,083 m ³)*	195 mm (45,840 m ³)*
72-hour (Runoff Volume)	40.2 mm (9,450 m ³)	79.1 mm (18,595 m ³)	105 mm (24,683 m ³)	135 mm (31,736 m ³)	176 mm (41,374 m ³)*	212 mm (49,837 m ³)*

* runoff volume exceeds typical pond capacity for stormwater runoff (35,000 m³)

The resulting volume estimates indicate that there is no change to the events that overtop the North and South Ponds. Events up to the 1% AEP 12-hour event are contained.

Construction of the Storage Shed requires modification of the existing drainage pit upstream of the railway. As shown in Plate 1, the pit features minor storage upstream of the culverts under the rail. To ensure protection of the rail and continuation of the stormwater management system performance, the following upgrades will be made to the drainage pit:

- Extension of pipes underneath the proposed shed footprint
- Install a new concrete headwall that increases heights by 500 mm (to approximately 351.25 mAHD)
- Allow for overflow through a headwall gap on the northern edge of the pit. A 1.25 m block will be left out of the northern wall with a spill point at approximately 350.73 mAHD.

Should the pit reach capacity during larger storm events, overflow is directed to the low point north of the pit reducing risk to the rail (Figure 2).

To avoid sedimentation within the pit, the design should allow for self-cleansing flow velocities to ensure any issues occur downstream of the storage shed and rail.



Plate 1: Drainage pit upstream of the railway

3. Design criteria modifications

There are no requirements to modify the design criteria.

4. Latest annual compliance report

There are no further compliance reports prepared since the 2020 report presented in the WMR (Advisian, 2021).

5. Calculation in the impervious area

As per Table 1 above. Construction of the Storage Shed will result in a minor increase in impervious area.

Conclusion

Assessment of the proposed Concentrate Dryer and Storage Shed facilities indicates that there is no increase in discharge offsite, or significant modification of the existing stormwater management system. The minor increase in impervious area does not impact the performance of the North and South ponds.

The drainage pit upstream of the rail will be modified to extend pipes under the shed and provide an overflow to protect the rail during larger stormwater events.

Note that this assessment assumes that ongoing maintenance and monitoring of the existing stormwater management, consistent with the Operating Licence, will be undertaken by BHP.

BHP Nickel West
Kalgoorlie Nickel Smelter (NKS)
Stormwater Management Plan

Figure 1: Stormwater Management
Catchments

Legend

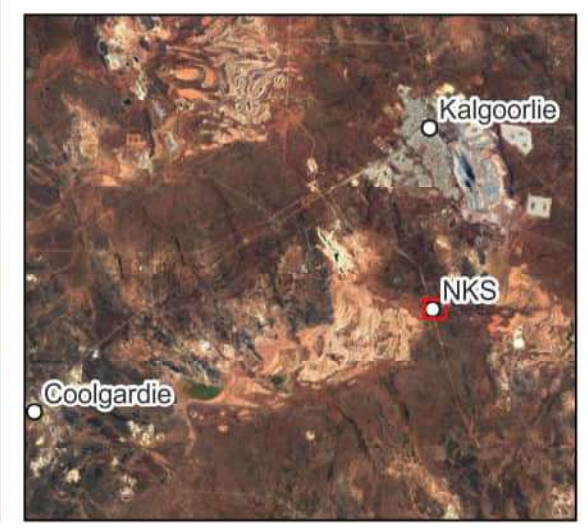
- Stormwater Management Infrastructure
- 1m Contour Lines
- Stormwater Catchment

Proposed Development

- Concentrate Dryer
- Storage Shed
- Existing Drainage Pit
- New Pavement
- Stormwater Pit



Date: 10/10/2022
Projection: GDA94 / MGA zone 51



BHP Nickel West
Kalgoorlie Nickel Smelter (NKS)
Stormwater Management Plan

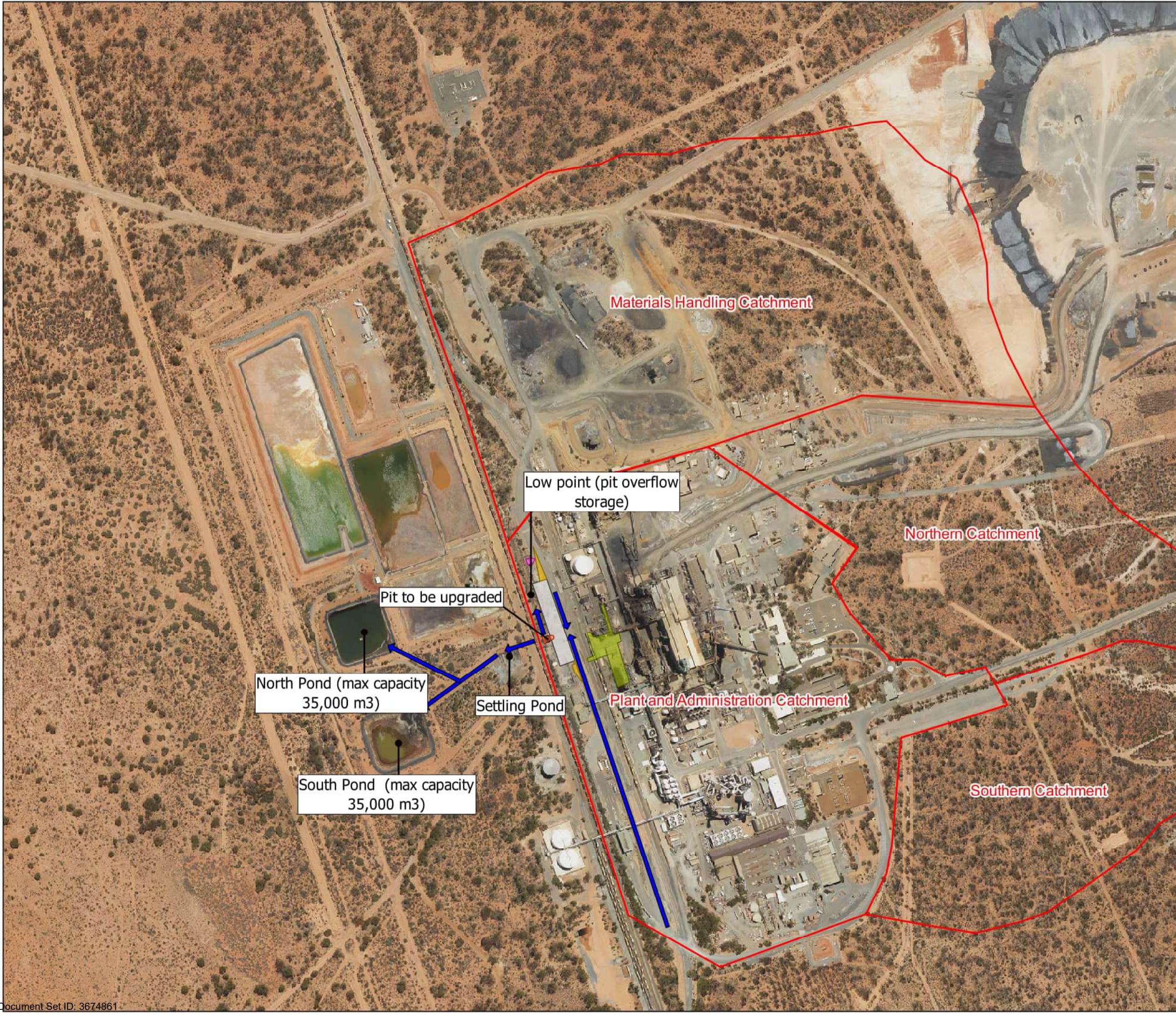
Figure 2: Onsite Stormwater Management

Legend

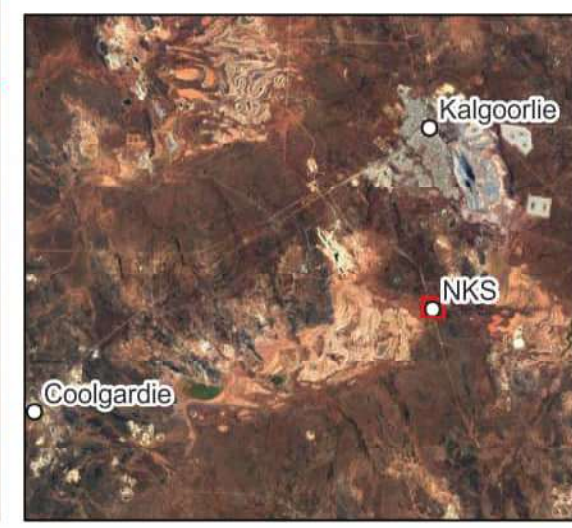
➡ Existing Flows

Proposed Development

- Concentrate Dryer
- Storage Shed
- Existing Drainage Pit
- New Pavement
- Stormwater Pit



Date: 03/04/2023
Projection: GDA94 / MGA zone 51



Bushfire Management Plan:
Development Application: Lot 100 of Plan 212288 –
Kalgoorlie Nickel Smelter

BHP Nickel West Pty Ltd

DOCUMENT TRACKING

Project Name	Bushfire Management Plan: Development Application: Lot 100 of Plan 212288 – Kalgoorlie Nickel Smelter
Project Number	600-22PER3657
Project Manager	Eva Cronin (BPAD Level 2 - 45482)
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Reviewed by	Daniel Panickar (BPAD Level 3 – 37802)
Approved by	Daniel Panickar (BPAD Level 3 – 37802)
Status	Draft
Version Number	v2
Last saved on	2 December 2022

This report should be cited as ‘Eco Logical Australia 2022. *Bushfire Management Plan: Development Application: Lot 100 of Plan 212288 – Kalgoorlie Nickel Smelter*. Prepared for BHP Nickel West Pty Ltd.

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from BHP Nickel West Pty Ltd (the client).

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Template 2.8.1

Version control	
Version	Purpose
v1	Draft – Submission to client
v2	Final

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1. Introduction

1.1 Proposal details

Eco Logical Australia (ELA) was commissioned by BHP Nickel West Pty Ltd to prepare a Bushfire Management Plan (BMP) to support a development application within the Kalgoorlie Nickel Smelter situated on Lot 100 of Plan 212288 (hereafter referred to as the subject property, Figure 1). The proposed development involves the construction of a new concentrate dryer, storage shed and associated infrastructure (hereafter referred to as the subject site) within the subject property (Figure 1; Figure 2; Figure 3).

The subject site is partially within a designated bushfire prone area as per the *Western Australia State Map of Bush Fire Prone Areas* (DFES 2021; Figure 4), which triggers bushfire planning requirements under *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; Western Australian Planning Commission (WAPC) 2015) and reporting to accompany submission of the development application in accordance with the associated *Guidelines for Planning in Bushfire Prone Areas v 1.4* (the Guidelines; WAPC 2021).

The subject property is located within the City of Kalgoorlie-Boulder on freehold land held by Nickel West Pty Ltd and is intersected by the West Kalgoorlie Esperance Railway Reserve. The subject site is immediately surrounded by infrastructure associated with the Nickel Smelter to the north, east and south and the railway reserve to the west.

This assessment has been prepared by ELA Bushfire Consultant Eva Cronin (FPAA BPAD Level 2 Certified Practitioner No. BPAD45482) with quality assurance undertaken by Principal Bushfire Consultant Daniel Panickar (FPAA BPAD Level 3 Certified Practitioner No. BPAD37802).

1.2 Purpose and application of the plan

The primary purpose of this BMP is to act as a technical supporting document to inform planning assessment. This BMP is also designed to provide guidance on how to plan for and manage the bushfire risk to the subject site through implementation of a range of bushfire management measures in accordance with the Guidelines.

1.3 Environmental considerations

SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values.

The proposed development will involve some clearing of vegetation to facilitate construction of the proposed storage shed and Asset Protection Zone (APZ) north of the shed. ELA has been advised that BHP Nickel West (BHP NiW) has the authority to manage and clear native vegetation within BHP NiW freehold tenure as per the granted CPS 9556/1 clearing permit.

A single season reconnaissance flora and vegetation survey and basic terrestrial fauna survey was undertaken in December 2021 by Biologic Environmental Survey Pty Ltd (Biologic 2021) to support upcoming proposed development within the Nickel Smelter Facility. The areas proposed to be cleared for development (including Asset Protection Zones (APZs) prescribed within this BMP) are located in

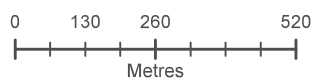
areas categorised as cleared/disturbed vegetation. The condition of the vegetation in these areas was identified as completely degraded and findings in the reconnaissance survey suggest no significant vegetation is identified within areas that are proposed to be cleared within the subject site.

All clearing will occur within the BHP NiW freehold tenure and no clearing of native vegetation is proposed within the adjacent railway reserve west of the subject site.



Figure 1: Site Overview

-  Subject site
-  Subject property
-  100m site assessment
-  150m site assessment



Datum/Projection:
GDA 1994 MGA Zone 51

22PER3657-SM Date: 8/11/2022



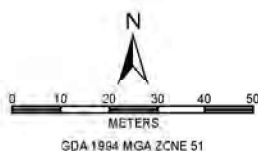


Figure 2: Site Plan
Version: 1, Version Date: 15/05/2023



Legend

-  Proposed Storage Shed (0.27ha)
-  NiW Freehold
-  3rd Party Tenements



BHP

CONFIDENTIAL

NKS CONCENTRATE STORAGE SHED

PLANNING & STANDARDS - NICKEL WEST

SCALE @ A3: 1:1,500	PREPARED: T RICHARDS	FIGURE: 1
DATE: 31/10/2022	REQUESTOR:	
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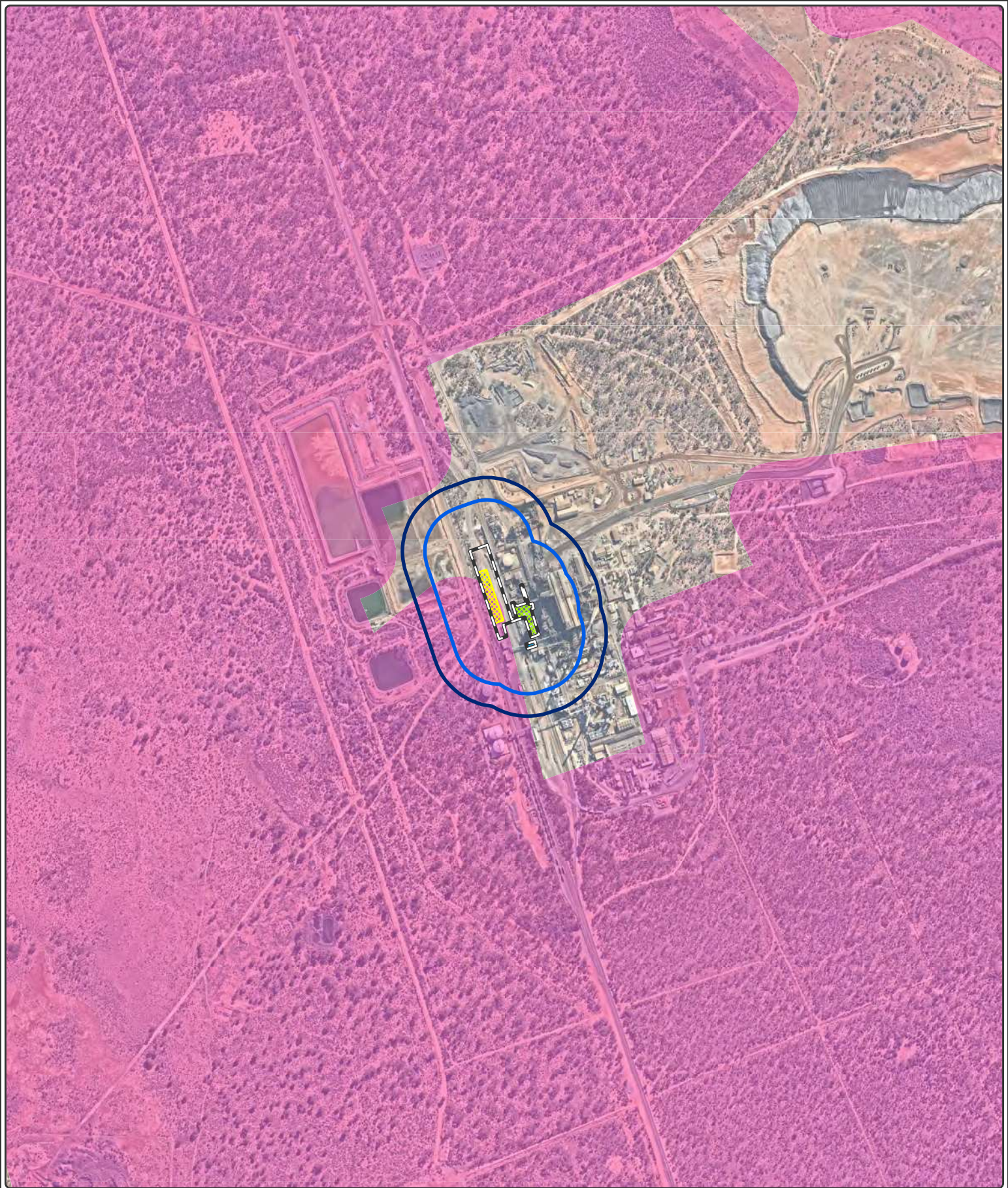
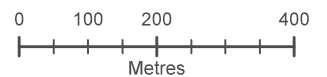


Figure 4: Bushfire Prone Areas

- | | |
|---|---|
|  Subject site | Development footprints |
|  100m site assessment |  Concentrate Dryer |
|  150m site assessment |  Crib Room |
|  Bushfire Prone Mapping (DFES 2021) |  Storage Shed |



Datum/Projection:
GDA 1994 MGA Zone 51

22PER3657-RD Date: 9/11/2022



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2. Bushfire assessment results

2.1 Bushfire assessment inputs

The following section is a consideration of spatial bushfire risk and has been used to inform the bushfire assessment in this report.

2.1.1 Fire Danger Index

A blanket Fire Danger Index (FDI) 80 is adopted for Western Australia, as outlined in Australian Standard AS 3959: 2018 *Construction of Buildings in Bushfire Prone Areas* (SA 2018) and endorsed by Australasian Fire and Emergency Service Authorities Council (AFAC).

2.1.2 Vegetation classification and slope under vegetation

Vegetation and effective slope (i.e. slope under vegetation) within the subject site and surrounding 150 m (the assessment area) were assessed in accordance with the Guidelines and AS 3959: 2018 with regard given to the *Visual guide for bushfire risk assessment in Western Australia* (DoP 2016). Given the regional location of the site, data collection including photographs was undertaken by the client was undertaken on 8 October 2022 for assessment by ELA.

The classified vegetation and effective slope for the proposed development from each of the identified vegetation plots are identified below in Table 1 and Figure 5.

Table 1: Classified vegetation as per AS 3959: 2018

Plot	Vegetation Classification	Effective Slope
1	Class D Scrub	All upslopes and flat land (0 degrees)
2	Class E Mallee	All upslopes and flat land (0 degrees)
3	Class B Woodland	All upslopes and flat land (0 degrees)
4	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-

Photographs relating to each area and vegetation type are included in Appendix A.

Classified vegetation within Plot 3 predominantly consists of mixed height shrubs up to 6 m in height with foliage cover greater than 30%. Occasional *Eucalyptus* trees ranging in height from approximately 6 to 20 m are scattered throughout the plot. Predominant vegetation type represents an open scrub structure that will likely influence the fire behaviour, however, this plot has been conservatively classified as Woodland to ensure increased setbacks from the development.

Vegetation within the subject site will be cleared to facilitate the proposed construction works. All other existing developed areas within the Nickel Smelter Facility will continue to be maintained as non-vegetated areas and/or low threat vegetation, therefore able to be excluded from classification in accordance with clause 2.2.3.2 (e) and (f) of AS 3959: 2018. Additionally, vegetation within 13 m to the north of the storage shed, that also occurs within the bounds of the BHP NiW freehold tenure, will be managed to Asset Protection Zone (APZ) standards (Appendix B). No clearing of native vegetation is

proposed within the adjacent railway reserve west of the subject site. A post-development vegetation classification map showing subject site cleared and APZs implemented is depicted in Figure 6.

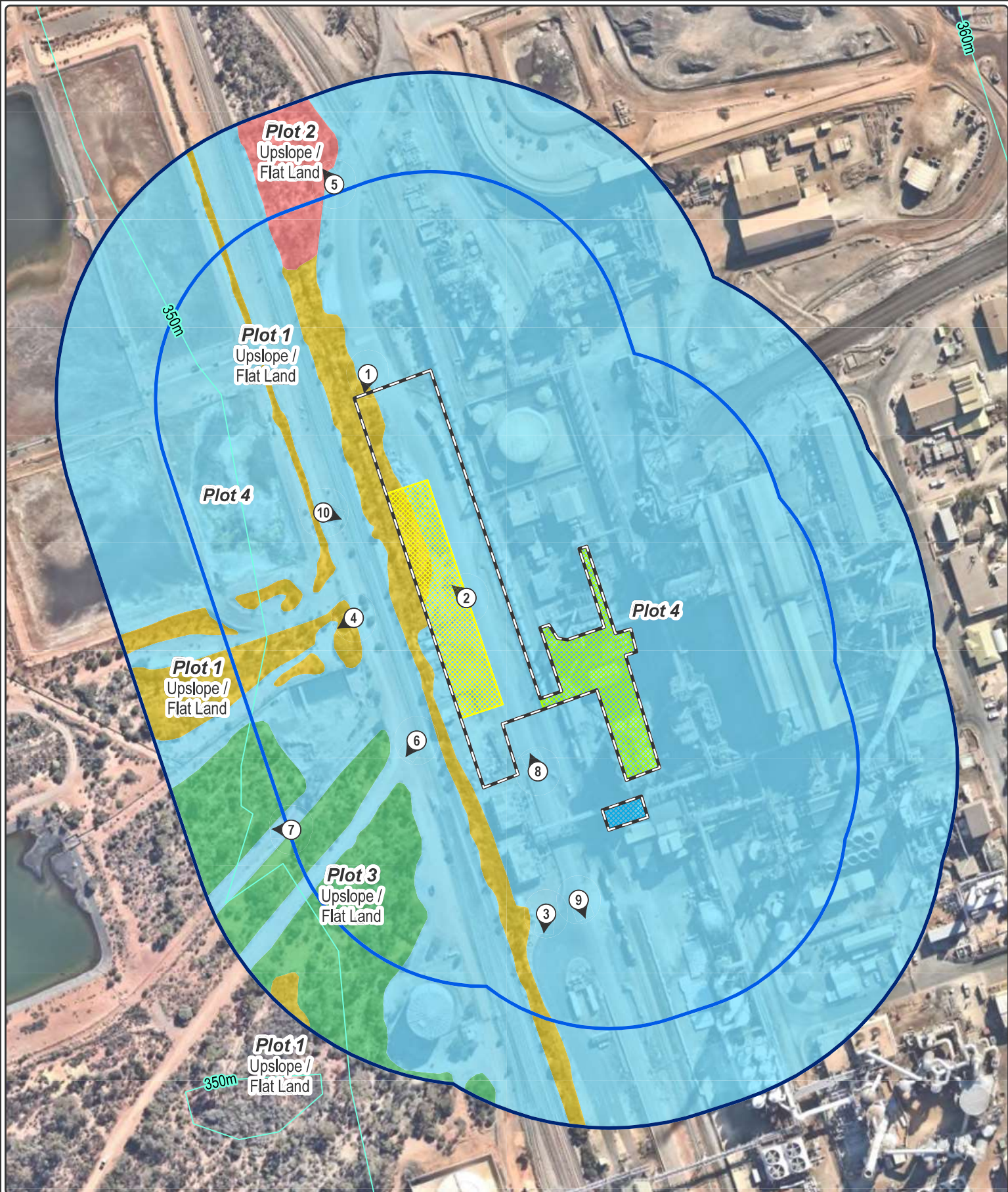
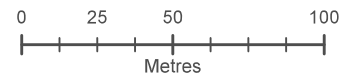
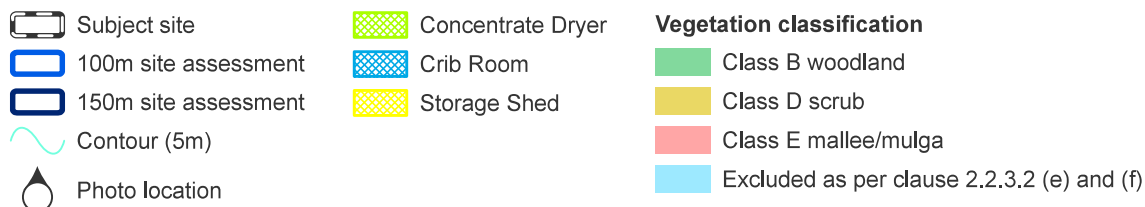


Figure 5: Vegetation Classification Pre-Development



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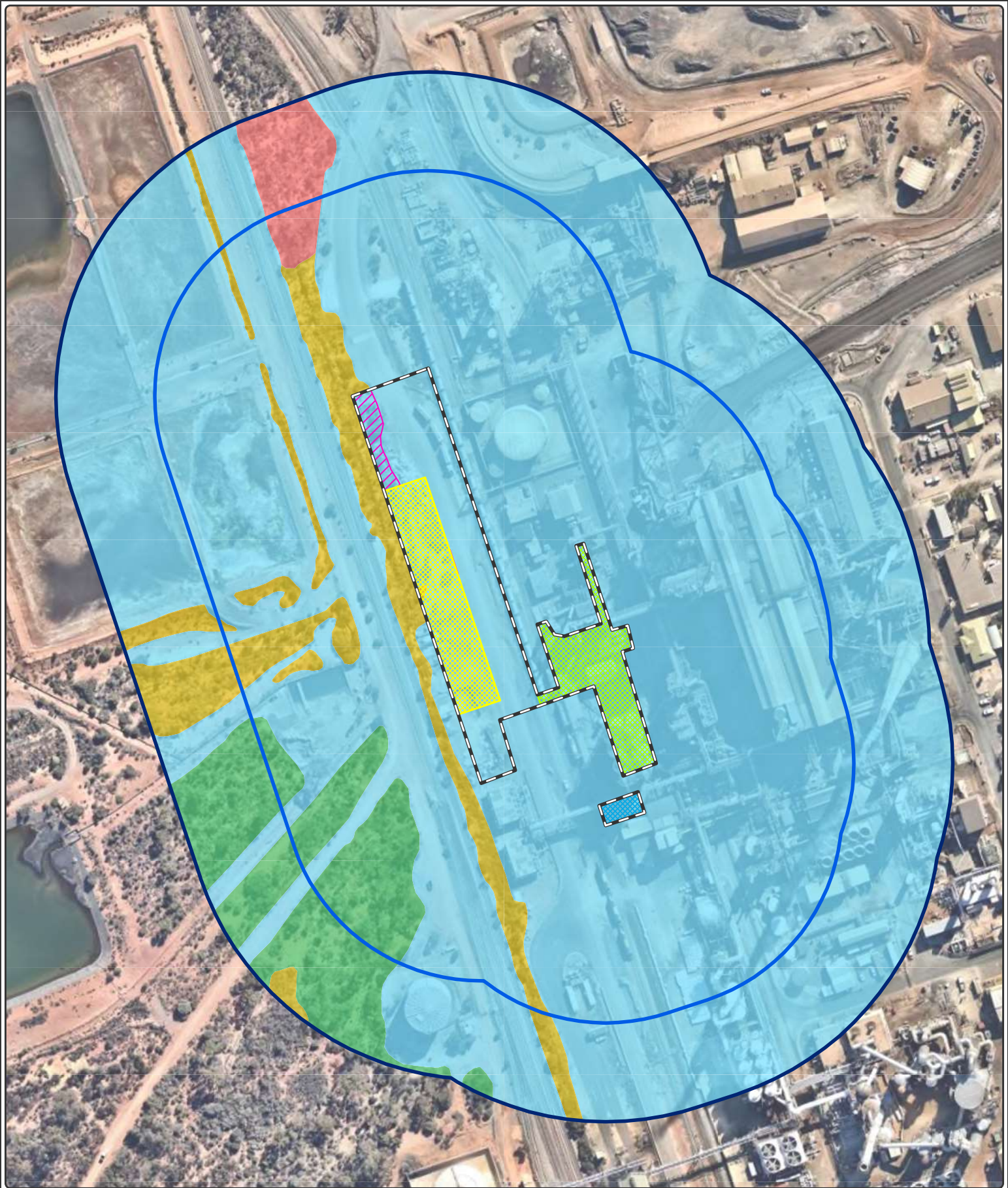


Figure 6: Vegetation Classification Post-Development

Subject site 100m site assessment 150m site assessment Asset Protection Zone (APZ)	Concentrate Dryer Crib Room Storage Shed	Vegetation classification Class B woodland Class D scrub Class E mallee/mulga Excluded as per clause 2.2.3.2 (e) and (f)	0 25 50 100 Metres Datum/Projection: GDA 1994 MGA Zone 51 22PER3657-SM Date: 9/11/2022
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2.2 Bushfire assessment outputs

A Bushfire Attack Level (BAL) assessment has been undertaken in accordance with SPP 3.7, the Guidelines, AS 3959: 2018 and the bushfire assessment inputs in Section 2.1.

2.2.1 BAL assessment

All land located within 100 m of the classified vegetation depicted in Figure 5 is considered bushfire prone and is subject to a BAL assessment in accordance with AS 3959: 2018.

A Method 1 BAL assessment (as outlined in AS 3959: 2018) has been completed for the proposed development and incorporates the following factors:

- Fire Danger Index (FDI) rating;
- Vegetation class;
- Slope under classified vegetation; and
- Distance between proposed development area and the classified vegetation.

Based on the identified BAL, construction requirements for proposed buildings can then be assigned (where applicable). The BAL rating gives an indication of the expected level of bushfire attack (i.e. radiant heat flux, flame contact and ember penetration) that may be received by proposed buildings and subsequently informs the standard of construction required to increase building survivability.

2.2.2 Method 1 BAL assessment

Table 2 and Figure 7 display the Method 1 BAL assessment (in the form of BAL contours) that has been completed for the proposed development in accordance with AS 3959: 2018 methodology.

Table 2: Method 1 BAL calculation (BAL contours)

Plot	Vegetation Classification	Effective Slope	Separation distances required				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class D Scrub	All upslopes and flat land (0 degrees)	<10	10-<13	13-<19	19-<27	27-<100
2	Class E Mallee	All upslopes and flat land (0 degrees)	<6	6-<8	8-<12	12-<17	17-<100
3	Class B Woodland	All upslopes and flat land (0 degrees)	<10	10-<14	14-<20	20-<29	29-<100
4	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-	No separation distances required – BAL-LOW				

Based on the site assessment inputs and BAL assessment, the proposed concentrate dryer and crib room development footprints achieve BAL ratings $\leq$ BAL-29. The BAL rating for the storage shed is BAL-FZ which is discussed in more detail in Section 2.3.

A summary of BAL ratings for each proposed building and/or development footprint within the subject site is provided in Table 3, noting that the precise location of buildings within the crib room and concentrate dryer development footprint areas are to be confirmed with the BHP Nickel West.

Table 3: BAL rating for proposed building within the subject site

Proposed development footprint/building	Plot most affecting BAL rating	Separation Distance (m)	BAL Rating
Concentrate Dryer (development footprint)	Plot 1	50 m	BAL-12.5
Storage Shed (building)	Plot 1	0 m	BAL-FZ
Crib Room (development footprint)	Plot 1	56 m	BAL-12.5

2.3 Identification of issues arising from the BAL assessment

Should there be any changes in development design or vegetation/hazard extent that requires a modified bushfire management response, then the above BAL ratings will need to be reassessed for the affected areas and documented in a brief addendum to this BMP.

In relation to the BAL ratings for the proposed buildings, the Guidelines state:

The bushfire construction requirements of the Building Code of Australia only apply to certain types of residential buildings (being Class 1, 2 or 3 buildings and/or Class 10a buildings or decks associated with a Class 1, 2 or 3 building) in designated bushfire prone areas. As such, AS 3959 does not apply to all buildings. Only vulnerable or high-risk land uses that fall within the relevant classes of buildings as set out in the Building Code of Australia will be required to comply with the bushfire construction requirements of the Building Code of Australia. As such, the planning process focuses on the location and siting of vulnerable and high-risk land uses rather than the application of bushfire construction requirements.

As buildings within the development footprint will be for industrial purposes, none of them will be a Class 1, 2 or 3 building and/or Class 10a building or deck associated with a Class 1, 2 or 3 building. Therefore, construction to AS 3959: 2018 is not required for these buildings. However, ember protection measures in sections 3 and 5 of AS 3959: 2018 are recommended to be incorporated where possible for the crib room.

The BAL rating for the storage shed is BAL-FZ due to a strip of scrub vegetation within the adjacent railway reserve to the west. This strip of vegetation has been classified in accordance with the simplified methodology for determining Bushfire Attack Level in AS 3959: 2018 due to the proximity of this vegetation to the proposed storage shed and its connection to vegetation further north and south of the subject site. The portion of the strip of vegetation adjacent to the storage shed is approximately 10 m wide and is separated from the bushfire hazard west of the railway line by a distance greater than 20 m. Additionally, this strip of vegetation adjacent to the proposed storage shed is located in an area identified as containing cleared/disturbed vegetation as identified within Biologic (2021). For these

reasons ELA believe the BAL rating for the shed is likely to be overestimated and represents a conservative BAL rating.

Construction of industrial buildings in areas subject to BAL-FZ and/or BAL-40 is not unprecedented and has been considered for approval in industrial developments within other jurisdictions such as Milpara Industrial Estate in the City of Albany. This consideration takes into account a number of factors including:

- The nature of industrial development which does not result in the same level of intensification as residential development on a landholding (i.e. industrial developments are a less dense development);
- The lower risk of loss of life and property as a result of bushfire in industrial development given high construction standards (detailed below) and shorter duration of occupancy (i.e. buildings are not occupied for the same length of time during a 24-hour period as residential buildings);
- Level of training of Emergency Response Team (ERT) members (Certificate III in Mines Rescue), existing firefighting equipment and water supply within the facility itself, including a fire station, two fire appliances (Tatra 3,000L and Canter 1,500 L) and numerous hydrants located throughout the facility (Appendix C);
- The construction of the storage shed from non-combustible material. Construction of the western elevation of the storage shed is trimdeck steel sheeting fixed externally to a concrete wall. The remainder of the storage shed will be constructed of trimdeck steel sheeting fixed externally to a steel framed wall.
- The construction standard to which industrial buildings are built to, specifically Volume 1, Sections C and D of the *National Construction Code (NCC) 2019 Volume 1* which detail:
 - Fire resistance (including from the external wall of another building [i.e. building to building fire]); and
 - Access and Egress (provision for escape etc.).

ELA notes that all Emergency Response Team (ERT) members are trained in the Certificate III in Mines Rescue as advised by BHP Nickel West. ELA have been advised that this training does include structural firefighting, however, no bushfire fighting modules are included in this qualification.

Due to legacy issues and the fact that siting options for the proposed development are restricted due to working within the confines of an existing operational facility, it is not possible for the proposed development to achieve full compliance with Acceptable Solutions A1.1 and A2.1 in the Guidelines with a portion of the western side of the storage shed subject to BAL ratings of BAL-FZ and BAL-40. As mentioned above however, construction of industrial buildings in areas subject to BAL-FZ and/or BAL-40 is not unprecedented and has been considered for developments in other jurisdictions taking into account the various factors. Decision makers are able to exercise discretion in relation to compliance with the Guidelines as per section 2.6 and 2.7 of the Guidelines and in ELA's professional opinion, this situation warrants such discretion being exercised.

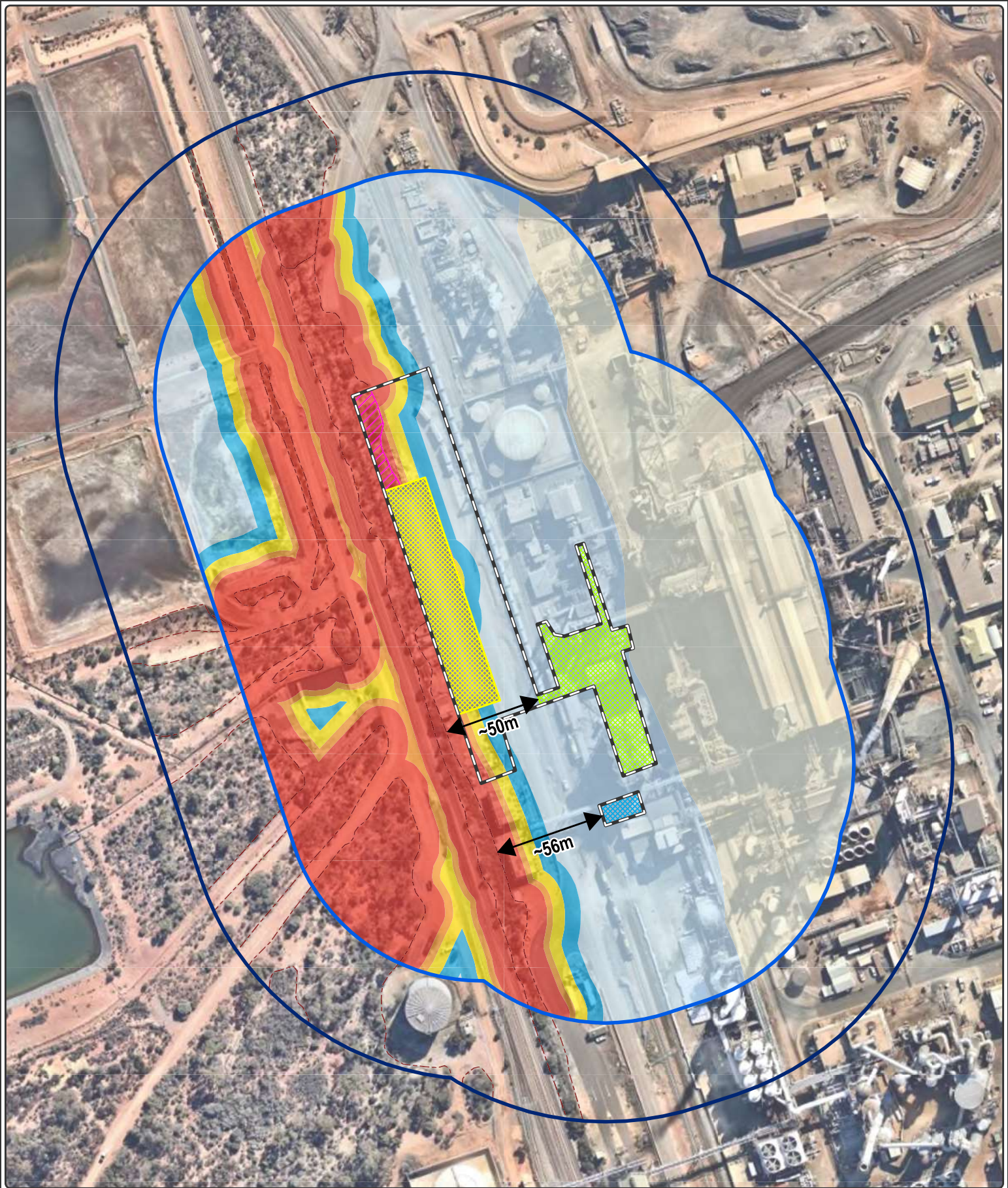


Figure 7: Bushfire Attack Level (BAL) Contours Post-Development

Subject site 100m site assessment 150m site assessment Asset Protection Zone (APZ) Bushfire hazard interface	Concentrate Dryer Crib Room Storage Shed	Bushfire Attack Level (BAL) BAL - FZ BAL - 40 BAL - 29 BAL - 19 BAL - 12.5 BAL - LOW	0 20 40 80 Metres Datum/Projection: GDA 1994 MGA Zone 51 22PER3657-SM Date: 9/11/2022
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3. Assessment against the Bushfire Protection Criteria

3.1 Compliance

The proposed development is required to comply with policy measures 6.2 and 6.5 of SPP 3.7 and the Guidelines. Implementation of this BMP is expected to meet objectives 5.1-5.4 of SPP 3.7.

In response to the above requirements of SPP 3.7 and the Guidelines, bushfire risk management measures, as outlined, have been devised for the proposed development in accordance with Guideline acceptable solutions to meet compliance with bushfire protection criteria.

Table 4 outlines the Acceptable Solutions (AS) that are relevant to the proposal and summarises how the intent of each Bushfire Protection Criteria has been achieved. No Performance Solutions (PS) have been proposed for this proposal. These management measures are depicted in Figure 8 where relevant.

Table 4: Summary of solutions used to achieve bushfire protection criteria

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 1: Location				Not compliant
A1.1 Development location	☐	☐	☐	The proposed crib room and concentrate dryer development footprints within the subject site will be located in an area subject to BAL ratings of BAL-12.5. The storage shed building will be located in an area subject to BAL ratings of BAL-FZ (Figure 7; Figure 8). Refer to section 2.3 for details and justification for approval of the non-compliance.
Element 2: Siting and design of development				Not compliant
A2.1 Asset Protection Zone (APZ)	☐	☐	☐	The proposed development (storage shed only) cannot achieve an APZ sufficient for the potential radiant heat flux to not exceed 29kW/m² due to adjacent vegetation to the west of the subject site (within the railway reserve) being located outside the lease boundary (refer to section 2.3 for details and justification for approval of the non-compliance). The entirety of the proposed APZ must be contained within the lease boundaries of the lot and, therefore, extends into vegetation immediately to the north of the storage shed only. The nature of the separation between the bushfire hazard to the west and concrete dryer and crib room development footprints (i.e. non-vegetated or low threat areas within already developed portions of the Nickel Smelter facility) means that an APZ is not required to achieve the determined BAL rating from these portions of the development. All areas excluded as either non-vegetated or low threat vegetation areas under clause 2.2.3.2 (e) and (f) of AS3959 within the lease boundary shall continue to be maintained to a low threat state to ensure the BAL-12.5 ratings remain in perpetuity.

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 3: Vehicular access				
A3.1 Public Roads	☒	☐	☐	The subject site is accessed via Smelterman Drive. The Guidelines do not prescribe values for the trafficable (carriageway/pavement) width of public roads as they should be in accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Austroad Standards and/or any applicable standard in the local government area. ELA are not traffic/civil engineers so cannot comment on whether these existing roads comply with Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area. ELAs assessment, however, has identified that Smelterman Drive is bitumen with estimated width of the sealed surface achieving a minimum width of at least 7 m and therefore consider this road would provide suitable access and egress for the community and emergency services personnel in the event of a bushfire. Vehicular access technical requirements in accordance with the Guidelines are detailed in Appendix C. The proposed development is considered to be compliant with A3.1.
A3.2a Multiple access routes	☐	☐	☐	Not compliant Refer to section 3.2
A3.2b Emergency Access way	☐	☐	☐	Not compliant Refer to section 3.2.
A3.3 Through-roads	☐	☐	☐	Not compliant Refer to section 3.2.
A3.4a Perimeter roads	☐	☐	☒	Acceptable Solution A3.4a applies to the strategic planning proposal, structure plan or subdivision application stage of the planning process. This proposal involves a development application for proposed additional structures within an existing industrial development. A3.4a is not applicable to this proposed development.
A3.4b Fire service access route	☐	☐	☒	Acceptable Solution A3.4b applies to the strategic planning proposal, structure plan or subdivision application stage of the planning process. This proposal involves a development application for a proposed additional structures within an existing industrial development. A3.4b is not applicable to this proposed development.

Bushfire Protection Criteria	AS	PS	N/A	Comment
A3.5 Battle-axe access legs	☐	☐	☒	Acceptable Solution A3.5 applies to the structure plan or subdivision application (where lot layout is known) stage of the planning process. This proposal involves a development application for a proposed additional structures within an existing industrial development. A3.5 is not applicable to this proposed development.
A3.6 Private driveways	☒	☐	☐	The existing internal access roads within the nickel smelter facility have been treated as a private driveway. ELA has been advised that all primary internal roads within the Nickel Smelter Facility are approximately 8-10 m wide. The internal access road is located adjacent to the development footprint and loops around through the facility to allow egress from the Smelter Facility either via additional access north of the facility or back onto Smelterman Drive to the east (Figure 8). The proposed development is considered to be compliant with A3.6.
A4.2 Provision of water for firefighting purposes	☒	☐	☐	Existing reticulated water supply is present within the facility. There are numerous existing hydrants within the facility as depicted in the Kalgoorlie Nickel Smelter (NKS) Fire Protection Site Plan (Appendix C) that receive a water supply (gravity fed and electric powered pump) from the Fire Water (FW) tanks (each with 500kL capacity) via predominantly underground steel pipe infrastructure. The 4,500 kL water tank located on the western side of the railway reserve (within the lease boundary) receives water supply from the Perth-Kalgoorlie Pipeline and is the primary water supply that pumps water to the two FW tanks. A back-up power supply independent of the electricity network grid to provide a water supply to hydrants is provided via a diesel powered pump. All hydrants are fitted with British Instantaneous Couplings (BIC) and the three tanks are steel plate construction. Refer to Section 3.3 below for additional details regarding existing above ground pipe infrastructure. ELA assumes existing hydrant connections (and any additional hydrants where required) are/will be provided in accordance with specifications of the relevant water supply authority. Note: additional hydrants will be installed for the proposed development as per the FES Commissioner's operations requirements as per regulation 18B of the Building Regulations 2012, however, this will be determined by the building surveyor and City of Kalgoorlie Boulder. The proposed development is considered to be compliant with A4.2.

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 5: Vulnerable tourism land uses	☐	☐	☒	This development application is not considered vulnerable tourism land use. Element 5 is not applicable to this proposed development.

NOTE – AS- ACCEPTABLE SOLUTION, PS- PERFORMANCE SOLUTION, N/A- NOT APPLICABLE

3.2 Acceptable solutions A1.1, A2.1, A3.2a, 3.2b & 3.3: Assessment

The proposed development is not compliant with Acceptable Solutions A1.1, A2.1, A3.2a, 3.2b & 3.3. Section 2.3 in this BMP provides details regarding non-compliance with Acceptable Solutions A1.1 and A2.1.

Public Road access to the Nickel Smelter facility is via an existing no-through road (Smelterman Drive) that is approximately 3 km in length, however, ELA note that existing secondary access via an easement is available connecting the Nickel Smelter Facility to Great Eastern Highway to the north west, thus providing an alternative access/egress route. The secondary access is not a public road and is being assessed against requirements for Emergency Access Ways (EAWs). The secondary access does not comply with Acceptable Solution A3.2b, and thus A3.2a, due to the length of the access (which is approximately 15 km long) being greater than 500 m in length. The secondary access does, however, achieve a minimum width of 6 m and connects to a Public Road (Great Eastern Highway) that provides access and egress in two different directions. BHP Nickel West have confirmed that the secondary access meets the public road vehicular access technical requirements for an Emergency Access Way in accordance with the Guidelines (Appendix C).

The secondary access is an easement (unsealed) that is maintained by BHP Nickel West maintenance department with signage at entry and exit points from Great Eastern Highway and the Smelter Facility indicating private property. There is restricted access at the back gate to the Smelter Facility (eastern end of the secondary access) that requires a BHP Nickel West swipe card to open this gate which is restricted to those who have completed the onsite driver learning module. Given the length of this secondary access ELA recommends that signage is placed at the entry and exit points from Great Eastern Highway and the Smelter Facility (back gate) indicating distances to the Smelter Facility or Great Eastern Highway as well as additional signage along the route indicating direction of the route and distances. There appears to be multiple points along the secondary access at varying distances apart that could be considered a T-Shaped turn-around area suitable for a Type 3.4 appliance (noting several of which are located greater than 500 m apart along the route), however, ownership of these other access tracks that intersect along points of the secondary access and availability of access to these areas is currently unconfirmed.

The secondary access is an easement (unsealed) that has the potential to provide a contingency (second) evacuation route for personnel within the Smelter facility (not public use) in the event of a bushfire, however, ELA recommend the use of this access as a contingency is carefully considered within the sitewide emergency plans in consultation with local fire emergency services given the length of the unsealed access traversing through a bushfire hazard and restricted access.

Smelterman Drive is considered to meet the public road vehicular access technical requirements in accordance with the Guidelines (Appendix C) with a turn-around area suitable for a Type 3.4 appliance

located near the entry to the facility, however, does not comply with Acceptable Solution A3.3 due to the length of the no-through road being greater than 200 m. Additional access (to the primary internal road) that is approximately 4 to 10 m wide that provides alternative connections to Smelterman Drive to the east is also available. All access and egress routes are depicted in Figure 8.

Due to the regional location of the facility and legacy issues, compliance with all the Acceptable Solutions in the Guidelines in relation to vehicular access and siting and design (as described in section 2.3) is not possible. As discussed in section 2.3, however, non-compliance with the Guidelines for Industrial developments is not unprecedented and ELA's professional opinion is that decision makers exercising discretionary decision making as per 2.6 and 2.7 of the Guidelines is warranted in this situation. Our opinion takes into consideration a number of factors in relation to the intensification of land use, expected shorter duration of occupancy of proposed buildings, higher construction standards applicable to industrial buildings under the NCC and the existing Kalgoorlie Nickel Smelter Fire Protection Site Plan in place (Appendix C).

3.3 Acceptable solutions A4.2 Assessment

The fire ring main pipe infrastructure (Appendix C) predominantly consists of underground steel, however, there are some areas within the facility containing above ground water supply pipes (for example the Acid Plant, concentrate handling, power house and flash furnace area). A portion of the water delivery pipe from the 4,500kL tank to the two 500kL FW tanks is above ground poly pipe (the section between 4,500kL tank and Acid Plant including over the rail corridor) with the remainder of the water pipes being underground steel materials. The above ground poly pipe was installed to bypass underground steel pipe failure points due to pipe degradation. To reduce the risk of the primary water supply pumped to the facility and FW tanks being compromised in the event of a bushfire, ELA strongly recommends BHP Nickel West consider upgrading this portion of above ground poly pipe where possible to metal material. This upgrade should be undertaken in consultation with the City of Kalgoorlie-Boulder and any other relevant technical experts (i.e. relevant specialist engineers) where relevant.

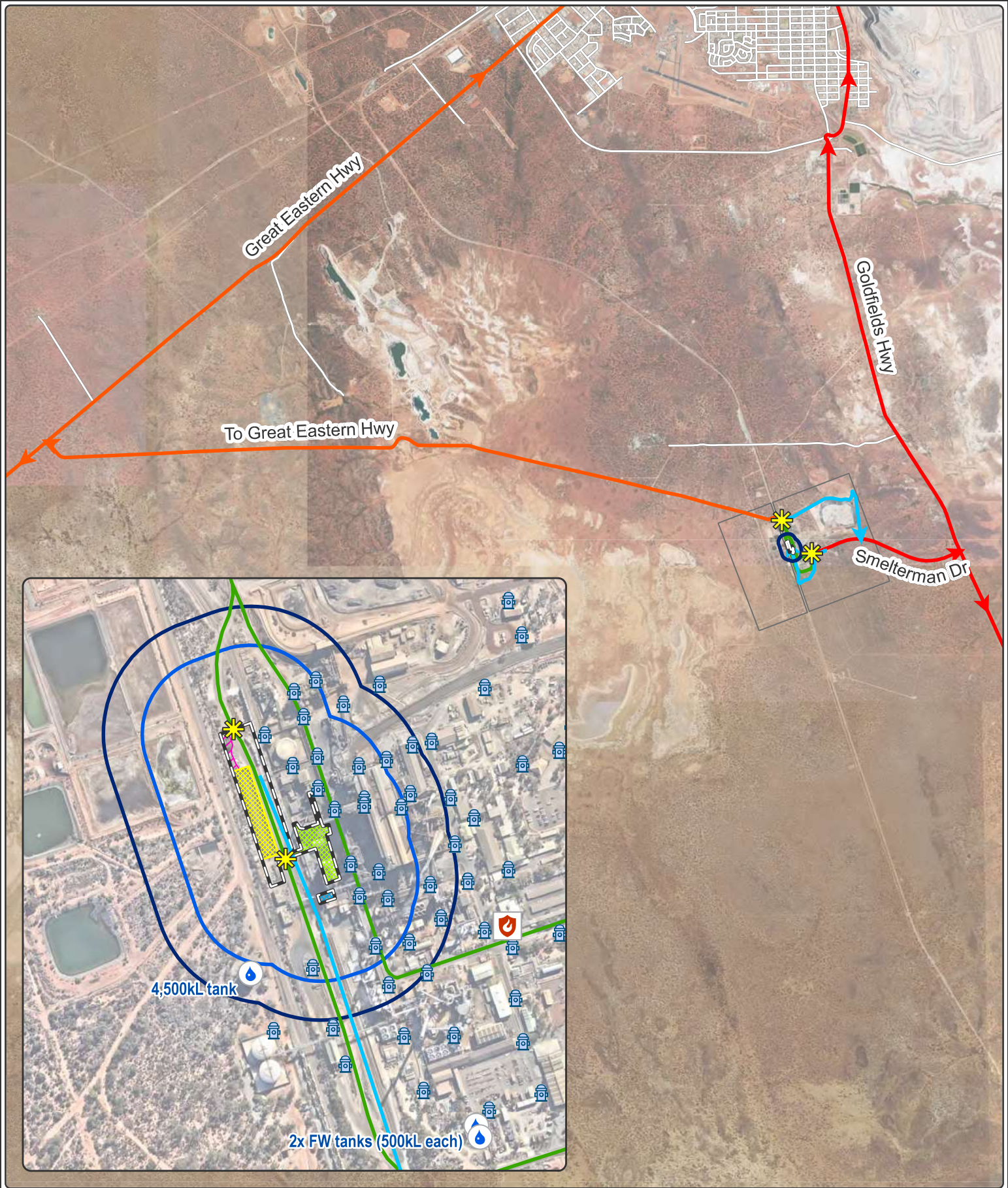


Figure 8: Spatial representation of the bushfire management strategies

- Subject site 100m site assessment 150m site assessment - Asset Protection Zone (APZ) - Subject property	- Fire station - Water tank - Concentrate Dryer - Crib Room - Storage Shed	- Access point - New twin head hydrant - Primary access/egress - Secondary access/egress - Internal loop - Alternate route	Bushfire Attack Level (BAL) - BAL - FZ - BAL - 40 - BAL - 29 - BAL - 19 - BAL - 12.5 - BAL - LOW	0124 Kilometres Datum/Projection: GDA 1994 MGA Zone 51 22PER3657-SM Date: 30/11/2022
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4. Implementation and enforcement

Implementation of the BMP applies to the developer, future owners within the subject site and the local government to ensure bushfire management measures are adopted and implemented on an ongoing basis. A summary of the bushfire management measures described in Section 3, as well as a works program, is provided in Table 5. These measures will be implemented to ensure the ongoing protection of life and property assets is achieved. Timing and responsibilities are also defined to assist with implementation of each measure.

Table 5: Proposed work program

No	Bushfire management measure	Responsibility
Prior to occupancy		
1	Ensure all APZs as depicted in Figure 8 are implemented in accordance with the Guidelines (Appendix B). Ensure all other existing developed areas within the assessment area (within 100m of the subject site/project area) continue to be maintained to a low threat standard as per Clause 2.2.3.2 (e) and (f) of AS 3959: 2018	BHP Nickel West Pty Ltd
2	Construct proposed industrial buildings to relevant construction standard in the NCC.	BHP Nickel West Pty Ltd
3	Provide firefighting water supply in accordance with relevant with specifications of the relevant water supply authority and other relevant legislation (i.e. Building Regulations 2012) where applicable.	BHP Nickel West Pty Ltd
Ongoing management		
4	Ensure all APZs as depicted in Figure 8 continue to be maintained in accordance with the Guidelines (Appendix B). Ensure all other existing developed areas within the assessment area (within 100m of the subject site/project area) continue to be maintained to a low threat standard as per Clause 2.2.3.2 (e) and (f) of AS 3959: 2018.	BHP Nickel West Pty Ltd
5	Continue to maintain internal access in accordance with the Guidelines (Appendix D).	BHP Nickel West Pty Ltd
6	Continue to maintain firefighting water supply in accordance with relevant with specifications of the relevant water supply authority and other relevant legislation (i.e. Building Regulations 2012) where applicable.	BHP Nickel West Pty Ltd
7	Continue to maintain the secondary access in accordance with public road vehicular access technical requirements for an Emergency Access Way in accordance with the Guidelines (Appendix C).	BHP Nickel West Pty Ltd

5. Conclusion

In the author's professional opinion, the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development. As such, the proposed development is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is recommended for approval.

6. References

Biologic Environmental Survey Pty Ltd (Biologic), 2021, *Kalgoorlie Nickel Smelter, Reconnaissance Flora and Vegetation Survey and Basic Terrestrial Fauna Survey*. Prepared for BHP Nickel West.

Department of Fire and Emergency Services (DFES), 2021, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>

Department of Planning (DoP), 2016, *Visual guide for bushfire risk assessment in Western Australia*. DoP, Perth.

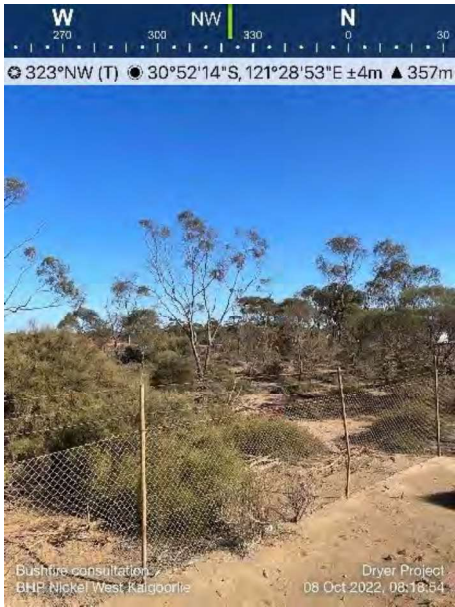
Standards Australia (SA), 2018, *Construction of buildings in bushfire-prone areas*, AS 3959-2018. SAI Global, Sydney.

Western Australian Planning Commission (WAPC), 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*. WAPC, Perth.

Western Australian Planning Commission (WAPC), 2021, *Guidelines for Planning in Bushfire Prone Areas Version 1.4 (including appendices)*, WAPC, Perth.

Appendix A – Classified Vegetation Photos

Plot	1	Classification or Exclusion Clause	Class D Scrub
		Photo Point 1	
		Classified vegetation within this plot consists of predominantly scrub up to 4 m in height with foliage cover greater than 30%. Some occasional trees up to 6 m in height are present.	
		Vegetation is situated on flat land.	
Plot	1	Classification or Exclusion Clause	Class D Scrub
		Photo Point 2	
		Classified vegetation within this plot consists of predominantly scrub up to 4 m in height with foliage cover greater than 30%. Some occasional trees up to 6 m in height are present.	
		Vegetation is situated on flat land.	
Plot	1	Classification or Exclusion Clause	Class D Scrub
		Photo Point 3	
		Classified vegetation within this plot consists of predominantly scrub up to 4 m in height with foliage cover greater than 30%. Some occasional trees up to 6 m in height are present.	
		Vegetation is situated on flat land.	

Plot	1	Classification or Exclusion Clause	Class D Scrub
		Photo Point 4 Classified vegetation within this plot consists of predominantly scrub up to 4 m in height with foliage cover greater than 30%. Some occasional trees up to 6 m in height are present. Vegetation is situated on flat land.	
Plot	2	Classification or Exclusion Clause	Class E Mallee
		Photo Point 5 Classified vegetation within this plot predominantly consists of mixed height shrubs 2 to 4 m in height with foliage cover less than 30%. The understorey consists of sparse low shrubs. Occasional taller <i>Eucalyptus</i> trees are scattered throughout, however, this plot has been classified based on predominant vegetation type that is expected to influence fire behaviour which is Mallee/Mulga. Vegetation is situated on flat land.	
Plot	3	Classification or Exclusion Clause	Class B Woodland
		Photo Point 6 Classified vegetation within this plot predominantly consists of mixed height shrubs up to 6 m in height with foliage cover greater than 30%. Occasional taller <i>Eucalyptus</i> trees (approximately 6 to 20 m in height) are scattered throughout the plot. Predominant vegetation type represents an open scrub structure, however, this plot has been conservatively classified as Woodland to ensure increased setbacks from the development. Vegetation is situated on flat land.	

Plot	3	Classification or Exclusion Clause	Class B Woodland
Photo Point 7			 Classified vegetation within this plot predominantly consists of mixed height shrubs up to 6 m in height with foliage cover greater than 30%. Occasional taller <i>Eucalyptus</i> trees are scattered throughout the plot. Predominant vegetation type represents an open scrub structure, however, this plot has been conservatively classified as Woodland to ensure increased setbacks from the development. Vegetation is situated on flat land.
Plot	4	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)
Photo Point 8			 This plot has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018. This area comprises access roads, cleared areas and existing industrial buildings/structures located within the Nickel Smelter Facility.
Plot	4	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)
Photo Point 9			 This plot has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018. This area comprises access roads, cleared areas and existing industrial buildings/structures located within the Nickel Smelter Facility.

Plot	4	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)
		Photo Point 10 This plot has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018. This area comprises cleared areas, access tracks and low threat isolated shrubs along western side of the adjacent railway reserve.	

Appendix B – Standards for Asset Protection Zones

The following standards have been extracted from the *Guidelines for Planning in Bushfire Prone Areas v 1.4* (WAPC 2021).

Every habitable building is to be surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

a. Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29) in all circumstances.

b. Location: the APZ should be contained solely within the boundaries of the lot on which a building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).

c. Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (below):

- Fences within the APZ:
 - Should be constructed from non-combustible materials or bushfire-resisting timber referenced in Appendix F of AS 3959.
- Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness):
 - Should be managed and removed on a regular basis to maintain a low threat state;
 - Should be maintained at <2 tonnes per hectare (on average); and
 - Mulches should be non-combustible (e.g. stone, gravel or crushed mineral earth) or wood mulch >6 millimetres in thickness.
- Trees (>6 metres in height):
 - Trunks at maturity should be a minimum distance of six metres from all elevations of the building;
 - Branches at maturity should not touch or overhand a building or powerline;
 - Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation;
 - Canopy cover within the APZ should be <15 per cent of the total APZ area; and
 - Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.

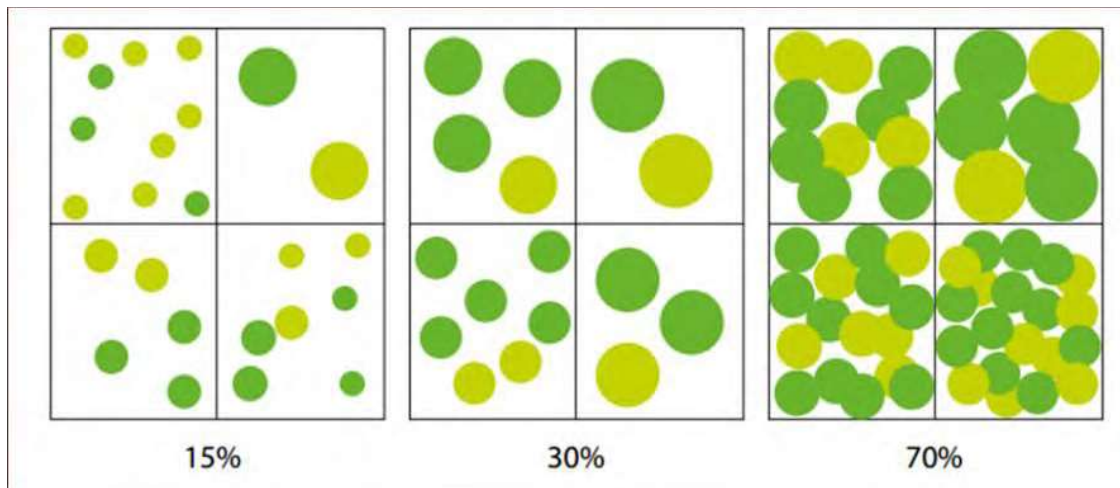


Figure 9: Illustrated tree canopy cover projection (WAPC 2021)

- Shrub and scrub 0.5 metres to six metres in height (shrub or scrub >6 metres in height are to be treated as trees):
 - Should not be located under trees or within three metres of buildings;
 - Should not be planted in clumps >5 square metres in area; and
 - Clumps should be separated from each other and any exposed window or door by at least 10 metres.
- Ground covers <0.5 metres in height (ground covers >0.5 metres in height are to be treated as shrubs):
 - Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above; and
 - Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
- Grass:
 - Grass should be maintained at a height of 100 millimetres or less, at all times; and
 - Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
- Defendable space:
 - Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
- LP Gas Cylinders:
 - Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building;
 - The pressure relief valve should point away from the house;
 - No flammable material within six metres from the front of the valve; and
 - Must site on a firm, level and non-combustible base and be secured to a solid structure.

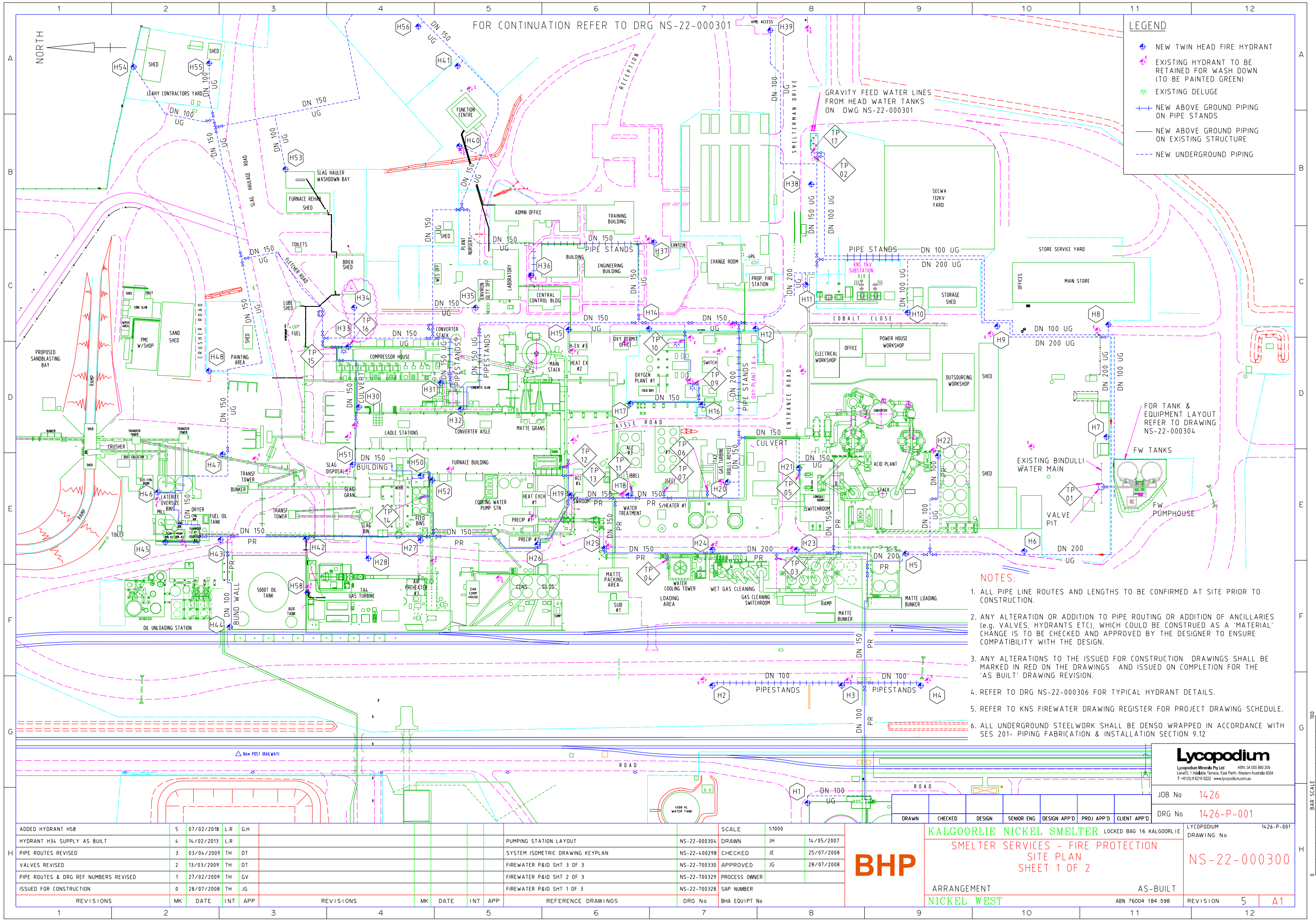
Additional notes

The Asset Protection Zone (APZ) is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. Hazard separation in the form of using subdivision design elements or excluded and low threat vegetation adjacent to the lot may be used to reduce the dimensions of the APZ within the lot.

The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity. The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

Plant flammability, landscaping design and maintenance should also be considered for trees, shrub, scrub and ground covers within the APZ. Please refer to explanatory notes 'E2 Managing an Asset Protection Zone (APZ) to a low threat state,' 'E2 Landscaping and design of an asset protection zone,' and 'E2 Plant flammability' in the Guidelines for further information relating to APZ standards.

Appendix C – Kalgoorlie Nickel Smelter Fire Protection Site Plan



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KALGOORLIE NICKEL SMELTER LOCKED BAG 16 KALGOORLIE

SMELTER SERVICES - FIRE PROTECTION

SITE PLAN

SHEET 1 OF 2

ARRANGEMENT

NICKEL WEST

AS-BUILT

ABN 76004 184 598

REVISION

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LYCOPodium

LYCOPodium Minerals Pty Ltd

ABN: 34 055 880 209

Level 5, 1 Adelaide Terrace, East Perth, Western Australia 6004

T: +61 (0) 8 6210 5222 www.lycopolium.com.au

JOB No

1426

DRG No

1426-P-001

LYCOPodium

DRAWING No

1426-P-001

Appendix D - Vehicular access technical requirements (WAPC 2021)

Technical requirements	Public road	Emergency access way ¹	Fire service access route ¹	Battle-axe and private driveways ²
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (m)	N/A	6	6	6
Minimum vertical clearance (m)		4.5		
Minimum weight capacity (t)		15		
Maximum grade unsealed road ³	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Maximum grade sealed road ³	As outlined in the IPWEA Subdivision Guidelines		1:7 (14.3%)	
Maximum average grade sealed road	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Minimum inner radius of road curves (m)	As outlined in the IPWEA Subdivision Guidelines		8.5	

¹ To have crossfalls between 3 and 6 %.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle

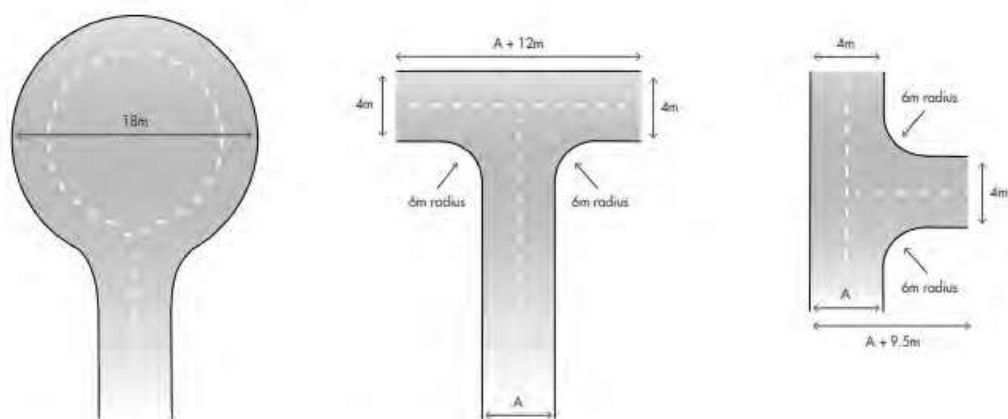


Figure 24: Turn-around area dimensions for a no-through road



15.2.3 Application for Planning Approval P065/23 - Proposed Concentrate Dryer and Associated Infrastructure - Lot 100 (Plan212288) Smelterman Drive, Feysville (Kalgoorlie Nickel Smelter)

Responsible Business Unit:	Development and Growth
Disclosure of Interest:	Nil
Application Number:	P065/23
Owner's Name:	BHP Nickel West Pty Ltd
Applicant's Name:	BHP Nickel West Pty Ltd
Development Value:	\$10.5 million
Voting Requirements:	Simple
Attachments:	1. DAP RAR Report P065 23 BHP Concentrate Dryer [15.2.3.1 - 10 pages]

OFFICER RECOMMENDATION/COUNCIL RESOLUTION

Moved By: Cr Wayne Johnson

Seconded By: Cr John Matthew

That Council, by Simple Majority, pursuant to s3.18 of the *Local Government Act 1995*, accepts the attached Responsible Authority Report (RAR) that includes conditions of approval.

CARRIED
(12 / 0)

For: Deputy Mayor Glenn Wilson, Mayor John Bowler, Cr Michael McKay, Cr Wayne Johnson, Cr Mandy Reidy, Cr David Grills, Cr Terrence Winner, Cr John Matthew, Cr Kirsty Dellar, Cr Amy Astill, Cr Kim Eckert and Cr Suzie Williams

Against: Nil

Executive Summary

Development approval is sought for the construction and operation of a nickel concentrate dryer and associated infrastructure for the Kalgoorlie Nickel Smelter (KNS), located at Lot 100 Smelterman Drive, Feysville.

The development value is \$10.5 million and as such the application is a mandatory determination by the Development Assessment Panel.

Conditional approval is recommended as the proposal is consistent with the 'Industry Extractive' development requirements of Local Planning Scheme No. 1 (LPS1).

Details of the Proposal

The City has received an application for the construction and operation of a nickel concentrate dryer and associated infrastructure for the Kalgoorlie Nickel Smelter, located at Lot 100 Smelterman Drive, Feysville.

BHP Nickel West operates the Kalgoorlie Nickel Smelter (KNS) in Kalgoorlie WA and is planning to undertake staged upgrades to KNS to improve production consistency and allow for future capacity uplift. KNS is located approximately 8km South of Kalgoorlie WA (see Figure 1.).

The facility produces granulated nickel matte containing about 68% nickel. The raw dry concentrate product is trucked from BHP operations at Kambalda and Leinster to the smelter for processing. KNS operates 24 hours a day, 7 days a week.

The new concentrate dryer will be installed on the Western side of KNS within the existing footprint of the KNS facility. The location and layout of the Project is shown in Figure 2. The project will include a product storage shed, front end loader, conveyors, dryer package, baghouse, fans, pumps and silos.

Construction is expected to commence October 2023 and be completed by September 2024.

Description of the Site

The subject site, Lot 100 Smelterman Drive, Feysville is zoned as 'Rural' under Town Planning Scheme No. 1. The subject land is located approximately 12km south of the Kalgoorlie Town Centre and measures 594.82ha. The site sits among other mining operations, with the nearest sensitive receptors located within South Boulder, approximately 8km to the north.

The nickel smelter facility, which opened in 1973, houses various administration buildings, plant and equipment, principally centred on the railway line, and also comprises of substantial areas of impermeable bitumen seal and concrete surfaces. See Figure 1.



Figure 1. The Subject Site

Site History/Previous Approvals

<i>Planning Approval</i>	<i>Description</i>	<i>Granted</i>
P120/21	Planning Approval for the construction and operation of an Oxygen Plant at the Kalgoorlie Nickel Smelter.	23 August 2021
PA120/21	Minor Amendment to DA P120/21 (Oxygen Plant)	25 July 2022
P049/22	Planning Approval for construction and operation of the Stabilised Residue Storage Dam #3 at the Kalgoorlie Nickel Smelter.	11 May 2022
P055/22	Planning Approval for construction and operation of an Oxygen Production Plant 2 at the Kalgoorlie Nickel Smelter.	13 June 2022
P004/23	Planning Approval to install and operate a Nickel Concentrate Storage Shed at the Kalgoorlie Nickel Smelter.	13 March 2023
P016/23	Planning approval for the construction of an electrostatic precipitator unit and switchroom.	21 April 2023

Public Consultation

In accordance with the procedure undertaken for previous applications at the smelter no public consultation was undertaken. The proposal is consistent with the established operation of the facility as a nickel smelter which has been in operation for 50 years. It is considered that the proposed concentrate dryer will not be likely to adversely impact on the amenity of the area or have an adverse impact on the local environment.

Consultation with Other Agencies

The application was not referred to other agencies. The applicant will be lodging a Works Approval application for the proposed development with the Department of Water and Environmental Regulation (DWER), as per the requirements of s54 of the *Environmental Protection Act 1986*.

Detail / AssessmentLocal Planning Scheme No. 1

Extractive Industry is an AA use within the Rural zone. The proposed development is considered to be incidental and a minor addition to the existing smelter.

There are no specific development standards for "Industry - Extractive" developments set out in LPS1 pertaining to height. Furthermore, the site is not within the height restricted area of Kalgoorlie airport.

In the context of the existing development on site, the proposed upgrading of the facility is not considered to be of a significance that will impact on the amenity of the surrounding area, nor will it be out of character for the site.

Draft Local Planning Scheme No. 2

Under the draft Local Planning Scheme No. 2 ('draft LPS2'), the subject land is proposed to be included in the 'General Industry' zone. The proposed facilities are considered to be consistent with General Industry zoning.

State Planning Policy 3.7: Planning in Bushfire Prone Areas

Whilst the location of the plant is not located within a designated Bushfire Prone Area, the surrounding land is within a Bushfire Prone Area. As such, the applicant submitted Bushfire Attack Level Assessment (BAL), which identified a BAL rating of BAL-12.5 for the proposed facility. The BAL assessment demonstrates the proposal complies with the bushfire protection criteria.

Environmental Protection Act 1986

The applicant is required to satisfy the approval requirements of the Department of Water and Environmental Regulation ('DWER'), as per the requirements of s54 of the *Environmental Protection Act 1986*. Works approval applications are intended to be considered in parallel with an application for development approval. Any potential air emissions, noise emissions or wastewater discharges are to be assessed by DWER, which is the primary regulator for emissions and discharges from a prescribed premises.

Conclusion

The proposed nickel concentrate dryer and associated infrastructure are facilities which are compatible with and ancillary to the previously established smelter. The

proposed development complies with the requirements of the LPS1 and it is recommended that the application be supported by the Council.

Community Strategic Plan Links

This report links to the Strategic Community Plan through the following Guiding Theme/s:

SUSTAINABLE: We advocate for the provision of land use.

Budget Implications

There are no financial implications resulting from the recommendations of this report.

Strategic Implications

There are no strategic implications resulting from the recommendations of this report.

Statutory Implications

If aggrieved by the decision of Council or any development conditions applied, the applicant will have a right of appeal to the State Administrative Tribunal. A review must be lodged within 28 days of the decision being made by the City. An advice note to this effect will be included in the decision notice.

Policy Implications

There are no policy implications resulting from the recommendations of this report.