BHP NICKEL WEST

Kalgoorlie Nickel Smelter

Native Vegetation Clearing Permit (NVCP) Application

Supporting Information
January 2022

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1. Introduction

BHP Nickel West (BHP NiW) operates the Kalgoorlie Nickel Smelter (NKS), originally constructed and commissioned under the Nickel Refinery (Western Mining Corporation Limited) Agreement Act 1968 (the State Agreement). NKS 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, Lot 100 on Plan 212288, Celebration Road. Figure 1 contains a map of the regional location.

The NKS smelts nickel concentrate supplied from BHP NiW and third-party mines and concentrators, which has a nickel content of approximately 15%. The concentrate received is smelted to produce a nickel matte of approximately 66% nickel content, which is then transported to the BHP NiW Kwinana Nickel Refinery for further processing or sold to third parties.

Existing smelting and ancillary infrastructure at the premises includes:

- A flash furnace and three converters (including a main stack and an secondary stack)
- An oxygen plant (with a second under construction)
- A waste heat boiler and two electrostatic precipitators
- A powerhouse
- An acid plant (including an acid plant stack)
- A weak acid effluent treatment plant
- A wastewater treatment plant
- Residue Storage Facility, which includes:
    - Gypsum and Brine Ponds (decommissioned)
    - Residue Holding Pond
    - Stabilised Residue Pond
    - Stabilised Residue Dam 2A
- Slag landform
- A matte drier (including a matte drier stack) and matte packing shed
- A material handling area
- An air quality control system
- A flux drier (including a flux drier stack)
- A stormwater management system
- A vehicle wash-down bay
- Chemical bulk storage area with both truck and rail load out facilities
- Mechanical and electrical workshops
- Hydrocarbon bulk storage area and Dehydrated Fuel Oil (DFO) plant
- Warehouse facility

2. Purpose of Document

BHP NiW has identified that a Native Vegetation Clearing Permit (NVCP) is required to support future projects and associated clearing activities within BHP NiW freehold land and associated Miscellaneous Licences and General Purpose, relevant tenure is identified in Section 3) at NKS. The NVCP is to ensure any disturbance associated with activities required for the maintenance of, or expansion at, the NKS site and surrounds are adequately assessed.

This document provides supporting information to accompany BHP NiW's Application Form (*NV-F01 Application for new permit or referral form*) (Appendix 1).

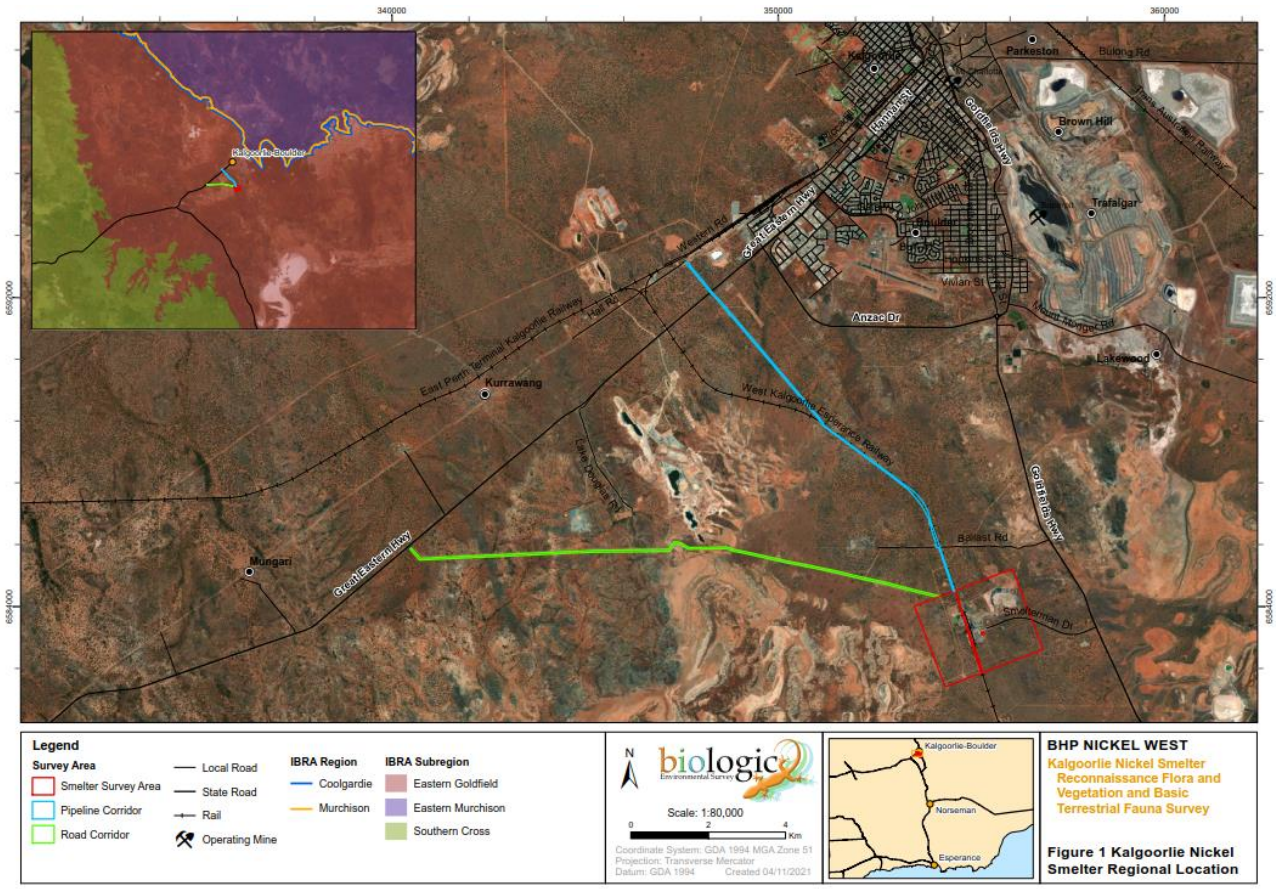
3. Tenure

The Application Area includes the following tenure (lease details at Appendix 2 and shown in Figure 2):

- Lot 100 on Plan 212288, Feysville (1670/313)
- Lot 66 on Plan 14433, Feysville (1670/311)
- L 26 /142
- G26/121
- G26/122
- G26/123
- G26/124
- G26/125
- G26/126
- G26/127
- G26/128

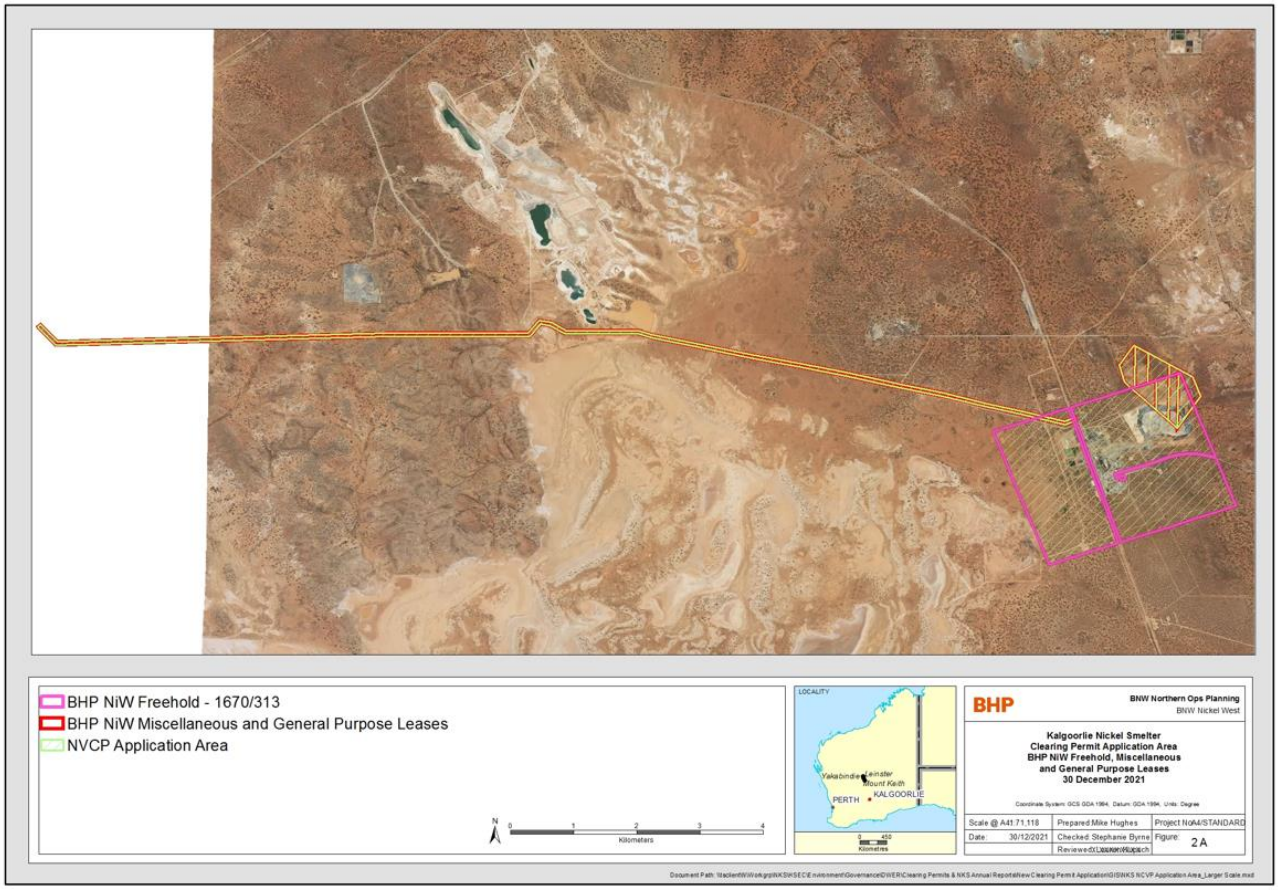
L26/288 is a pipeline and road corridor from NKS to Binduli Offtake, covering an existing track and underground water pipeline that supplies potable water to the site (Highlighted in blue, Fig 2). This Miscellaneous License application is yet to be granted and has therefore been excluded from the NVCP Application Area. Once this tenure is granted it is BHP NiW's intention to amend the NVCP to include L26/288 (48.7376 Ha) to support maintenance activities associated with the road and pipeline.

Figure 1: Kalgoorlie Nickel Smelter Regional Location



N.B. the 'Pipeline Corridor' (L26/288) has been excluded from the Application Area.

Figure 2: Kalgoorlie Nickel Smelter Clearing Permit Application Area



4. Proponent

The proponent for this NVCP is BHP Nickel West Pty Ltd, and the contact details are provided in Table 1.

Table 1: BHP NiW Contact Details

Contact	BHP NiW Details
Address for Correspondence	BHP Nickel West Land Services PO Box 8301 PERTH BUSINESS CENTRE 6849 nickelwestGLS@bhp.com
Contact (Perth Office)	Stephanie Byrne Environmental Specialist Ph: 0455 999 394 Email: stephanie.byrne@bhp.com
Site Contact	Nathan Wawatai Superintendent HSE Ph: 0432 833 473 Email: nathan.wawatai@bhp.com

4.1 History

In 2018, an application was submitted to consolidate the clearing permit status over Lot 100, which was previously subject to the following permits:

- CPS 2330/2 – expired 12 July 2010.
- CPS 2602/2 – expired 18 October 2018.

The 2018 application resulted in the current NCVP, CPS 8164-2, which was approved for use in November of 2018. CPS 8164-2 is a Purpose Permit which allows for clearing of no greater than 15 hectares of native vegetation within Lot 66 and Lot 100. This permit is due to expire in 2028, however the disturbance limit is not sufficient to support upcoming projects.

5. Proposed Activities

The proposed purpose of the NVCP is disturbance associated with maintenance activities and/or expansion projects at the Kalgoorlie Nickel Smelter. Such activities may include, but are not necessarily limited to:

- Processing, such as;
  - Expansion of the Slag Dump.
- Processing infrastructure, such as:
  - Storage facilities,
  - Hardstands,
  - Laydown areas,
  - Roads,
  - Pipelines, and;
  - Communications.
- associated activities, such as:
  - Geotechnical investigations,
  - Access tracks,
  - Exploration,
  - Perimeter / Security Fencing,
  - Power lines,
  - Topsoil stockpiling,
  - Hydrological drilling (including pad and sump construction),
  - Water bores (abstraction and monitoring), and;
  - Borrow pits.
- Future Transformation Projects, as determined by the business.

This application seeks approval to clear up to 231 Ha of vegetation within an application area of 705.7814 Ha. Significant projects considered in determining the required allocation include the expansion of the slag dump (42 Ha) and the area within L26 / 142 (73 Ha) has been included to support maintenance activities along the road between the Smelter and the Goldfields Highway. A number of future projects are likely to be undertaken on previously disturbed land and will be further assessed prior to execution. Refer to Figure 2 for the proposed clearing permit Application Area at the Kalgoorlie Nickel Smelter.

5.1 Other Approvals

Approvals applicable to NKS operations are provided in Table 5.

Table 5: NKS approvals

Legislation	Approval	Expiry	Details
Environmental Protection Act 1986 (Part V)	11 June 2015	10 June 2034	L8653/2012/2 – Authorises emissions and discharges resulting from NKS operations. The licence was amended 14 August 2017 (2012/003930) to authorise BHP NiW to process waste oil.
Environmental Protection (Clearing of Native Vegetation) Regulations 2004	19 November 2018	19 November 2028	CPS 8164/2 (existing permit) – Authorises clearing for the purpose of mineral processing.
Planning and Development Act 2005	NA	NA	Development Application No. P083/18, P084/18, P085/18 was determined on 19 September 2018 and authorised the construction of the Flash Drier for nickel concentrate at NKS. Development Application No. P120/21 was determined on 27 July 2021 and authorised the construction of an Oxygen Production Plant to support nickel smelting at NKS.

Dangerous Goods Safety Act 2004	20 February 2017	20 March 2022	DGS005987 – Authorises the storage of dangerous goods at NKS in accordance with the licence conditions.

5.1.1 State Agreement

NKS was constructed and operated in accordance with 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). NKS presently sits on freehold land held by BHP NiW and continues to be operated pursuant to applicable laws.

5.1.2 Part IV of the EP Act

There is no active ministerial statement or assessment applicable to NKS operations. This project is not expected to have significant environmental impacts and therefore referral under Part IV of the EP Act is not required.

6. Proposed NVCP Instruments

BHP NiW commits to undertaking clearing activities in accordance with the content and commitments of Table 2.

The application area is the extent shown in Figure 2 and provided as spatial files in Appendix 3.

Table 2: Proposed NVCP content and commitments

Proposed Content	
Authorising agency	Department of Water and Environmental Regulation
Permit title	BHP Nickel West Kalgoorlie Nickel Smelter NVCP
Area of clearing	231 Ha
Application area	705.19 Ha
Purpose of clearing	Maintenance and expansion of site activities
Tenure	• Lot 100 on Plan 212288, Feysville (1670/313) • Lot 66 on Plan 14433, Feysville (1670/311) • L 26 /142 • G26/121 • G26/122 • G26/123 • G26/124 • G26/125 • G26/126 • G26/127 • G26/128
Duration of permit	10 years
Proposed annual reporting date	12 months following permit grant date
Proposed final reporting date	10 years following permit grant date
Proposed Commitments	
Soil	No soil will be removed from the proposed NVCP area. Topsoil will be stockpiled and reused for landscaping/rehabilitation where practical. Clearing and topsoil to be managed in accordance with BHP NiW Topsoil Stripping and Handling Procedure (NIW-HSEC-PRO-0035), as may be amended from time to time.
Land Conservation	Clearing will be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance. Previously cleared / disturbed areas will be prioritised to ensure the clearance of native vegetation is minimised where possible.

Heritage	Heritage surveys will be undertaken for any projects which have the potential to impact identified heritage sites and heritage sites will be avoided where possible, All future development activities will comply with the Aboriginal Heritage Act 1972 (and any superseding legislation). Heritage sites will also be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance.
Weeds	Weed control activities are undertaken at site on an as needs basis to control outbreaks. Weed management will also be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance.
Vegetation of Significance	One of the vegetation types delineated within the application area is considered to be of local importance: S3 (Mid sparse Duma florentia shrubland). This vegetation was identified as having affinities to the Priority 3 Emu Land System PEC and occurs across a small portion in the north-west corner of the smelter area within the application area. While this vegetation type occurs beyond the application area in the immediate surrounds, due to its local importance BHP NiW is committing to avoiding this vegetation type, as much as practical.

6.1 Legislative requirements and associated approvals

Clearing and associated activities at the Kalgoorlie Nickel Smelter and associated Miscellaneous Licences and General Purpose Leases will maintain compliance with State and Commonwealth legislation, including but not limited to:

- *Aboriginal Heritage Act 1972 (and any superseding legislation)*
- *Biodiversity Conservation Act 2016* (State) (BC Act)
- *Conservation and Land Management Act 1984*
- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act)
- *Environmental Protection Act 1986*
- *Mining Act 1978*
- *Biosecurity and Agriculture Management Act 2007*
- *Planning and Development Act 2005 (WA).*

Any other relevant additional approvals will be sought as required. BHP NiW employs internal environmental and heritage review procedures prior to any clearing and/or ground disturbance.

7. Existing Environment

BHP NiW commissioned Biologic Environmental Survey to undertake a:

- single-season reconnaissance flora and vegetation survey and a single-season basic vertebrate fauna survey at their Kalgoorlie Nickel Smelter operations; and
- targeted flora and fauna survey of proposed pipeline and road alignment corridors.

Note the proposed pipeline corridor tenure application is yet to be granted, and this tenure has therefore been excluded from the NVCP Application Area. It is BHP NiW's intention to amend the NVCP in the future to include this tenure, once granted.

The General Purpose Leases which sit outside of the Freehold Boundary to the North East (G26/121, G26/122, G26/123 and G26/124) for the purpose of residue disposal were not included in the survey. These areas have been previously rehabilitated and are considered disturbed. This area has been identified for potential expansion of the Slag Landform; as such, those General Purpose Leases are included in the Application Area.

7.1 Climate

The Coolgardie bioregion experiences an arid to semi-arid climate, with an average rainfall between 200-300 mm, sometimes in summer but usually in winter (Cowan, 2001). The Bureau of Meteorology (BoM) weather station at Kalgoorlie-Boulder Airport (station 12038); located 8.8 km north of the Survey Area provides long-term climatic data relevant to the Survey Area. Kalgoorlie-Boulder Airport receives an average annual rainfall of 264.9 mm, with a bimodal rainfall pattern with peak falls in summer (February) and winter (June) (Figure 3). Summer rainfall originates from deteriorating tropical cyclones that cross the coast of northern Western Australia and dissipate to the south-east. Winter rainfall results from cold fronts crossing the southern coastline and moving inland. The highest temperatures are recorded between November and March, when mean minimum and maximum temperatures are 18.3°C and 33.6°C, respectively. The lowest temperatures are recorded between June and August, when mean minimum and maximum temperatures are 5.1°C and 16.8°C, respectively.

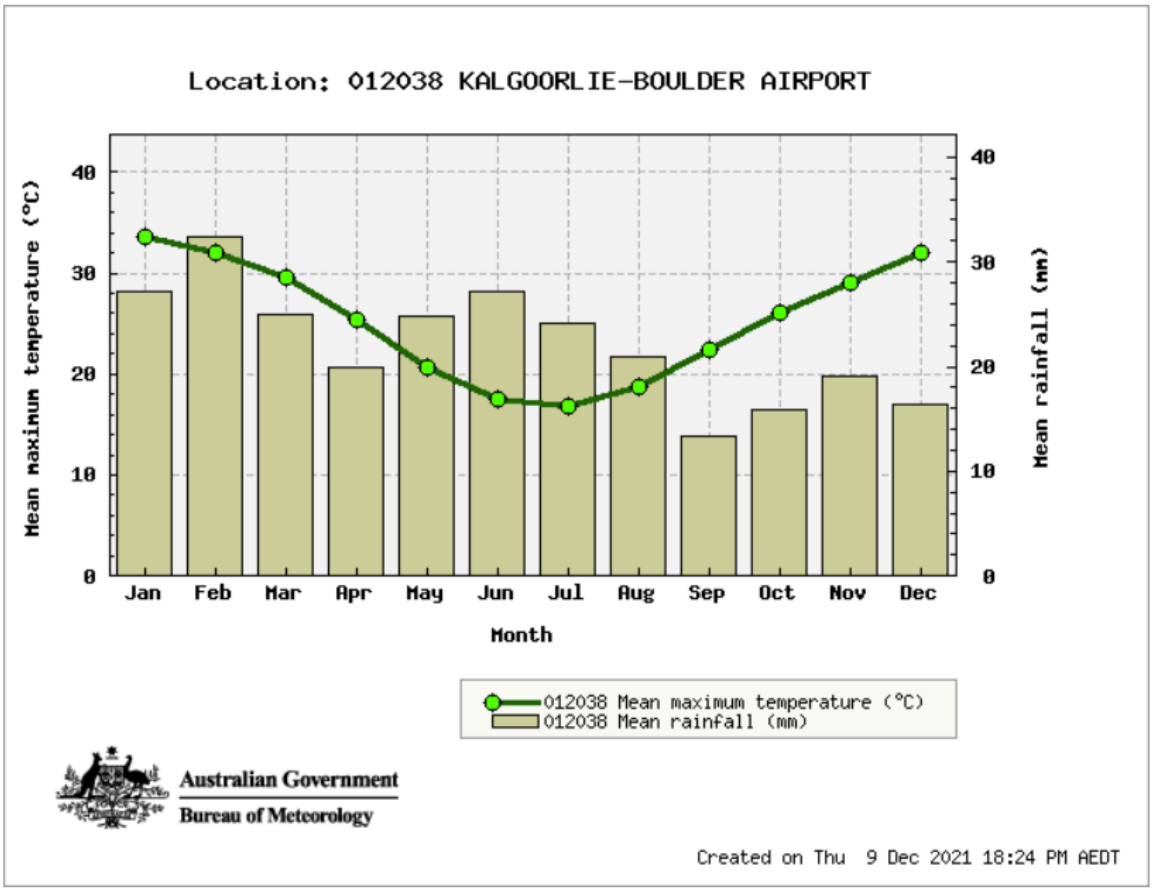


Figure 3: Long term climate averages for Kalgoorlie-Boulder (BoM 2021)

7.2 Landforms and soil types

The Kalgoorlie Nickel Smelter is located within the Eastern Goldfields subregion of the Coolgardie bioregion. The Coolgardie bioregion is located within the Yilgarn craton and is characterised by a granite basement with occluded drainage (Biologic 2021). The Eastern Goldfields subregion is characterised by low hills and undulating plains, covered with tertiary soils and with scattered exposures of bedrock (Cowan 2001). Vegetation within the subregion is of mallees, acacia thickets and shrub-heaths on sandplains, and diverse eucalyptus woodlands occur around salt lakes, on ranges and in valleys (McKenzie et al. 2002).

The Department of Agriculture has conducted a number of rangeland surveys since 1972 and completed mapping of the biophysical resources of the region (Biologic, 2021). Based on this mapping, the Kalgoorlie Nickel Smelter occurs across three soil-land systems (Table 3). The western side of the smelter area consisting mostly of valley plains with instances of outcropping (Mx43 land system) and the eastern side consisting of rocky ranges and hills (BB5 land system). The pipeline corridor is located exclusively within Mx43 land system, with the road corridor intersecting both BB5 and Mx43 systems plus additionally passing through SV15 land system characterised by salt lake and saltpan systems. All land systems identified in the Survey Area extend well outside the Kalgoorlie Nickel Smelter (Biologic 2021).

Table 3: Land systems within the application area

Land System	Description	Area within NVCP (ha)
BB5	Rocky ranges and hills of greenstones-basic igneous rocks	423.0
Mx43	Gently undulating valley plains and pediments; some outcrop of basic rock	263.4
SV15	Salt lakes and their associated areas	30.6

N.B. the 'Pipeline Corridor' (L26/288) is included in these survey datasets.

The Kalgoorlie Nickel Smelter falls within the Kalgoorlie Province which consists of an extensive plateau of low relief. Flat to undulating plains with small valleys (occasionally broken by low narrow rocky hills, ridges, tors and bosses) are most commonly found on granitic terrain (Tille 2006). On these plains may be found some silcrete duricrust, claypans, salt lakes with dunes and lunettes, gilgai areas, small remnants of sand plain, and small dune tracts (Tille 2006).

The Kalgoorlie Nickel Smelter occurs across three soil-landscape units closely associated with the corresponding land system mapping (Table 4). The smelter area is predominantly characterised by shallow soils of soil unit BB5, with the eastern portion consisting of low nutrient soils (soil unit Mx43). The pipeline corridor intersects both BB5 and Mx43 soil units, while the road corridor to the west intersects all three soil units.

Table 4: Geological units within the application area

Unit code	Description	Area within NVCP (ha)
BB5	Soils with predominantly physical limitations; shallow soils.	537.7
Mx43	Soils with predominantly chemical limitations; soils naturally low in nutrients.	160.3
SV15	Soils with predominantly chemical limitations; saline soils.	19.0

N.B. the 'Pipeline Corridor' (L26/288) is included in these survey datasets.

7.3 Hydrology

The Kalgoorlie Nickel Smelter area does not contain major rivers or watercourses and is likely to only contain surface water for temporary periods of time following substantial rainfall events (Biologic 2021). Two minor non-perennial watercourses intersect the eastern boundary of the area. Surface drainage flows away from the smelter area toward salt lakes situated on both the east and western flanks of the Kalgoorlie Nickel Smelter (Biologic 2021).

7.4 Contaminated sites

According to the DWER Contaminated Sites Database, no registered contaminated sites have been identified within the Survey Area. Investigations of potential contamination are ongoing, in consultation with DWER.

7.5 Flora and vegetation

The Kalgoorlie Nickel Smelter is located in the Coolgardie Botanical District, in the South Western Interzone Botanical Province, and is characterised by eucalypt woodlands, becoming open and with saltbush-bluebush understorey on the more calcareous soils (Beard 1990).

Biologic Environmental Survey (Biologic) completed a flora and vegetation survey of the Kalgoorlie Nickel Smelter and adjoining corridors in September 2021. The survey delineated seven vegetation types (Biologic 2021) (Figure 4, Table 5). The majority of the condition of vegetation was very good, with condition ranging from degraded to excellent (Biologic 2021). In addition to the seven vegetation associations described, there are also cleared and disturbed areas that are lacking of vegetation (Figure 4).

Table 5: Vegetation units within the application area (Biologic 2021)

Vegetation Type	Vegetation Description
E1 Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland	Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland over occasional dense patches of *Melaleuca sheathiana* shrubs over mid open *Senna artemisioides* subsp. *filifolia*, *Exocarpos aphyllus* and *Eremophila scoparia* over low open *Atriplex nummularia* subsp. *spathulata*, *Olearia muelleri* and *Scaevola spinescens* shrubland on mid and lower slopes and flats on brown clay loam with limited surface stones.
E2 Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissima* mallee woodland	Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissimi* mallee woodland over tall open *Eremophila interstans*, *Senna artemisioides* subsp. *filifolia* and *Santalum acuminatum* shrubland over mid to low open *Halgania andromedifolia* and *Scaevola spinescens* shrubland over low open *Triodia scariosa* hummock grassland on mid slopes on red/brown sandy clay loam with limited surface stones.
E3 Low open *Eucalyptus torquata* mallee woodland	Low open *Eucalyptus torquata* mallee woodland over tall sparse *Alyxia buxifolia* shrubland over mid to open low *Scaevola spinescens*, *Acacia erinacea* and *Westringia rigida* shrubland over occasional patches of *Triodia scariosa* hummock grasses on rocky (calcrete pebbles) upper and mid slopes on red/brown sandy clay loam.
E4 Low open *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* mallee woodland	Low open *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* mallee woodland over occasional dense patches of *Melaleuca sheathiana* shrubs over mid open *Scaevola spinescens* and *Senna artemisioides* subsp. *filifolia* shrubland over low open *Westringia rigida* and *Halgania andromedifolia* shrubland over occasional patches of *Triodia scariosa* hummock grasses on plains and flats on red/brown sandy clay loam with limited surface stones.
S1 Tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland	Tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland over mid open *Scaevola spinescens*, *Pomaderris forrestiana* and *Prostanthera incurvata* shrubland with low isolated *Eucalyptus torquata*, *Eucalyptus griffithsii* and *Eucalyptus longissima* mallee trees over occasional patches of *Triodia scariosa* hummock grasses on rocky (dolerite and calcrete pebbles) hill tops (crests) and upper hill slopes on red sandy clay loam.

Vegetation Type	Vegetation Description
S2 Mid to low open mixed chenopod shrubland	Mid to low open *Lycium australe*, *Frankenia* sp. indet., *Maireana sedifolia*, *Atriplex nummularia*, *Atriplex vesicaria* and *Sclerolaena diacantha* on saline flats and floodplains on orange clay loam.
S3 Mid sparse *Duma florentia* shrubland	Mid sparse *Duma florulenta* shrubland with scattered fringing *Melaleuca lateriflora* shrubs over scattered herbs and grasses on claypans and depressions on red/brown clay

One PEC, 'Emu Land System', was identified by the desktop assessment as occurring approximately 40 km to the north-east of the Survey Area. This PEC is listed as a Priority 3 community and consists of fresh or brackish ephemeral lakes and swamps with cane grass, lignum and paperbark shrublands (DBCA, 2017). The Emu Land System does not occur within the Survey Area according to soil landscape mapping for the rangelands (DPIRD, 2021a, 2021b).

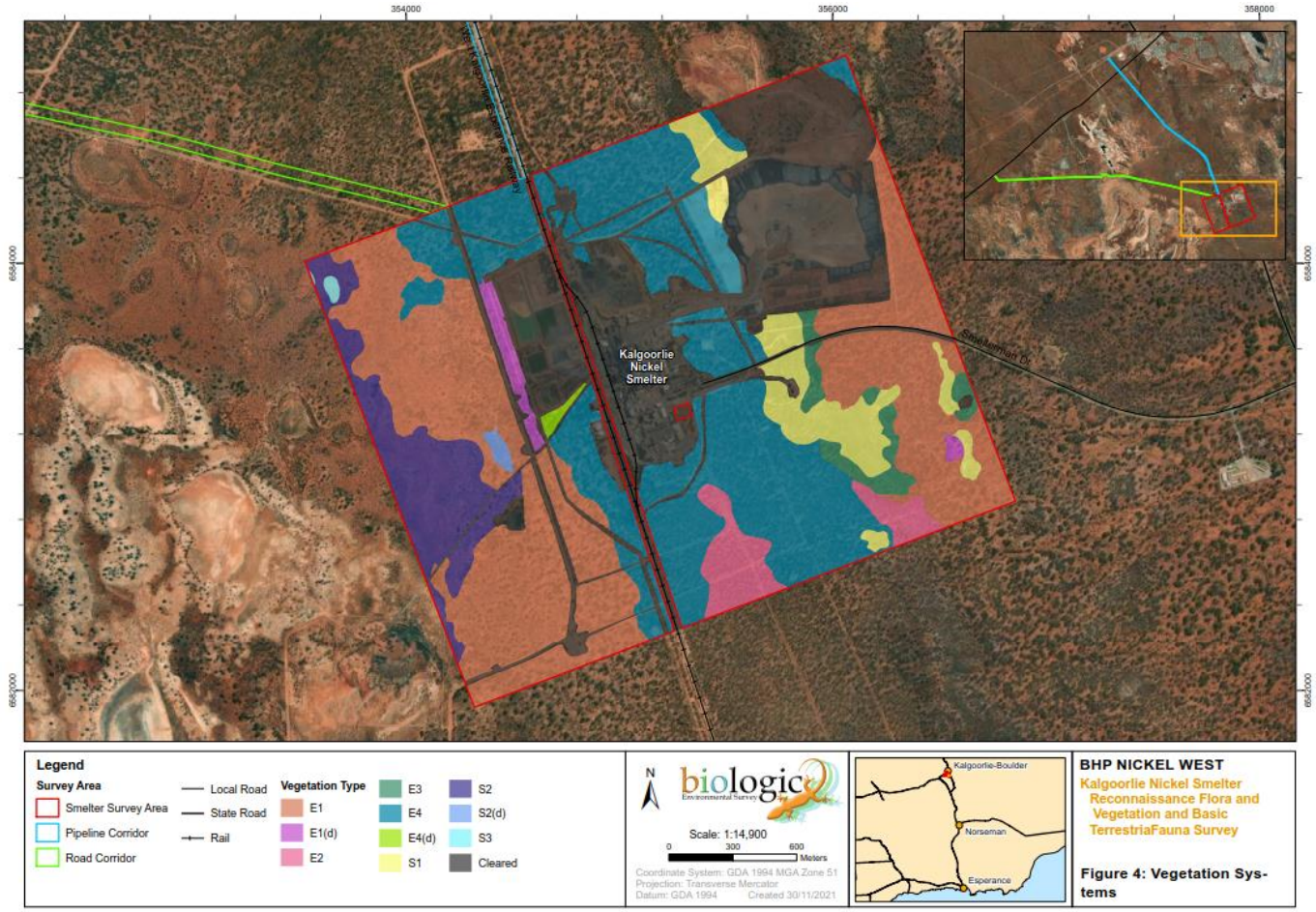
One of the vegetation types recorded in the Kalgoorlie Nickel Smelter area was assessed as having affinities to the 'Emu Land System' PEC, type S3 (Mid sparse *Duma florentia* shrubland). This is due to the vegetation type containing lignum (*Duma florulenta*), along with the presence of scattered herbs/ grasses, fringing *Melaleuca lateriflora,* and the occurrence of this vegetation on claypans. Although this vegetation type cannot be representative of the PEC based on geographical distribution, it has been noted as sharing superficial similarities to the 'Emu Land System' PEC in both landform and vegetation structure (Biologic 2021). Given the presence of additional claypans to the west of the Survey Area visible on aerial photography, further study would be required to determine whether this vegetation type extended beyond the boundaries of the Survey Area (Biologic 2021). Due to the affinities with the PEC, this vegetation type is considered to be of local importance and therefore will be avoided as much as practical.

A total of 114 native flora species from 62 genera and 31 families were recorded by Biologic from within the Kalgoorlie Nickel Smelter area. No Threatened Flora as listed under the BC Act have been recorded within or surrounding the Kalgoorlie Nickel Smelter and corridor areas, and none are expected to occur (Biologic 2021).

No Priority Flora, as listed by the Department of Biodiversity, Conservation and Attractions (DBCA), have been recorded from within the Kalgoorlie Nickel Smelter and corridor areas (Biologic 2021). One Priority 2 species, *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156), is considered "possible" to occur in the area. One specimen collected during the survey (identified as *Lepidosperma* sp. indet.) was noted as having affinities with the Priority 2 species; however, the specimen collected during this survey was sterile, and there is insufficient material and supporting literature to confidentially identify the specimen to species level. The specimen was assessed however, as not representing the Priority species (Biologic 2021). All other conservation significant flora taxa are considered either unlikely or highly unlikely to occur in the area.

Five weeds have been recorded in low densities from within the Kalgoorlie Nickel Smelter and corridor areas. Of the five weeds recorded, **Echium plantagineum* (Patterson's Curse) is a Declared Pest under s22 of the *Biosecurity and Agriculture Management Act 2007*, and **Eragrostis curvula* is on the priority list for the Goldfields Region due to it being currently absent from lands managed by the DBCA (Biologic 2021).

Figure 4: Vegetation associations of the application area



N.B. the 'Pipeline Corridor' (L26/288) has been excluded from the Application Area.

7.6 Fauna and fauna habitats

In conjunction with the flora and vegetation survey, Biologic also completed a vertebrate fauna survey of the Kalgoorlie Nickel Smelter and corridor areas (Biologic 2021).

The survey delineated four naturally occurring fauna habitat (Biologic 2021) (Figure 5); Open Eucalypt Woodland, *Allocasuarina* Shrubland, Low Chenopod Shrubland and Claypan. All fauna habitat types, are common throughout the local area and throughout the surrounding region. These habitat types are considered to be of low or moderate significance for vertebrate fauna species as they are widespread in the surrounding landscape and/or are not exclusively relied upon by species of conservation significance (Biologic 2021).

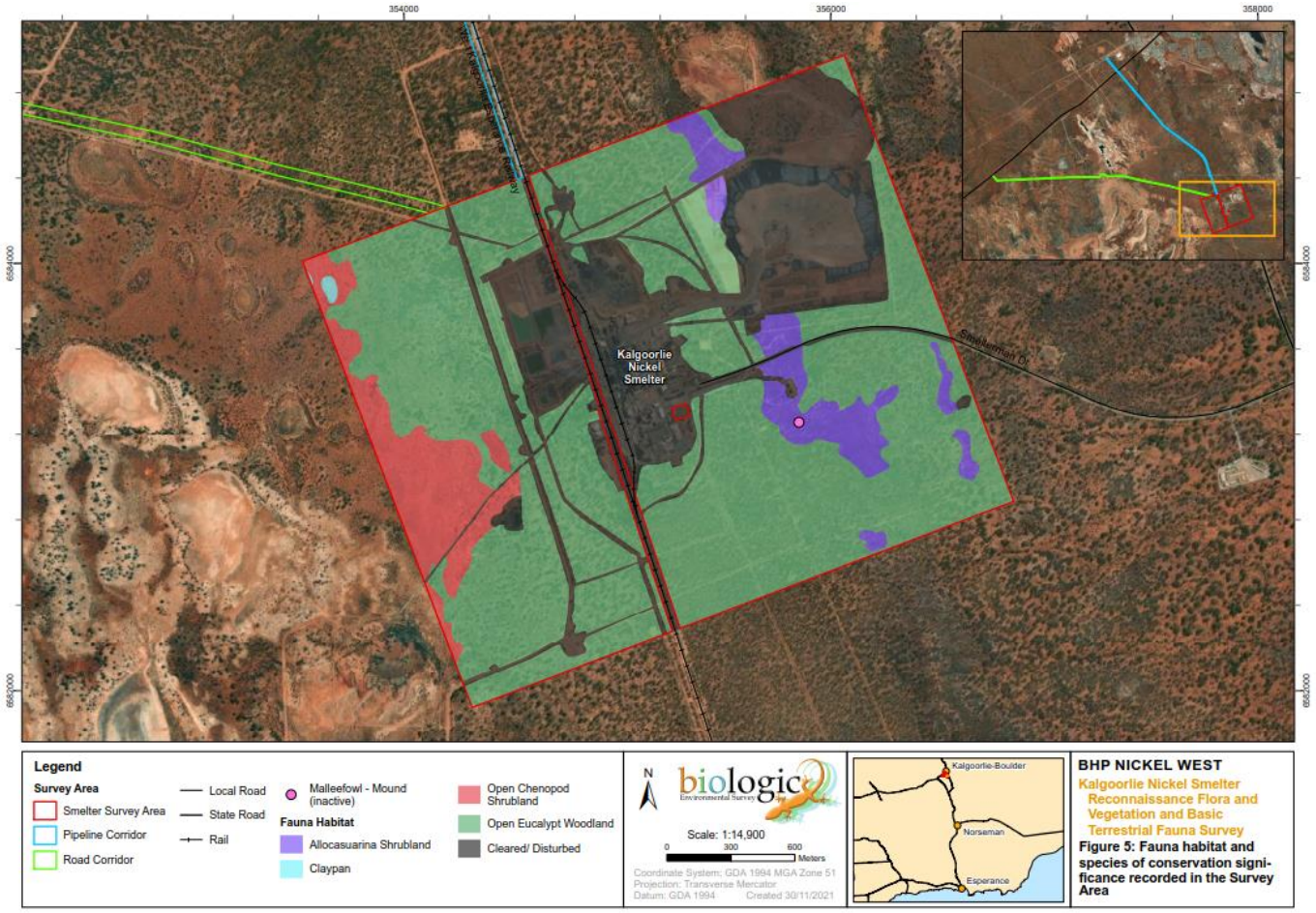
There are also cleared and disturbed areas within the smelter and corridor areas; these areas have not been defined as fauna habitat as were entirely clear of vegetation (Figure 5). There is an artificial water sources located within the north-western portion of the smelter area that may be used by waterbird species; however, the series of ponds are located within a highly disturbed area associated with mining operations and therefore not of value to fauna for long-term survival. The artificial habitat provides little to no value to fauna species, particularly those of conservation significance (Biologic 2021).

Biologic recorded 18 vertebrate species, comprising two mammals (one of which is introduced) and 16 birds, during the survey (Biologic 2021). One of the species recorded during the survey, the Malleefowl (*Leipoa ocellata*), is listed as Vulnerable under the EPBC Act and BC Act. Historical evidence of this species was recorded from within the smelted area in the form of an old, inactive mound within the *Allocasuarina* Shrubland habitat (Figure 5). No further or recent evidence of the species was recorded during the survey, suggesting Malleefowl are not currently utilising the area. The level of disturbance present in the area reduces the likelihood of this species occurring. This species is considered unlikely to be dependent on any of the fauna habitat within

the Kalgoorlie Nickel Smelter and corridor areas (Biologic 2021). No other species of conservation significance (Threatened or Priority fauna) were recorded from within the area (Biologic 2021).

Based on the habitats present within the area, and the known records of the significant fauna in the region, Biologic assessed eight bird species of conservation significance as “possible” to occur in the area (Biologic 2021). The eight species were considered unlikely to be dependent on any specific fauna habitat within the Kalgoorlie Nickel Smelter and corridor areas (Biologic 2021). All other species were considered unlikely or highly unlikely to occur within the area.

Figure 5: Fauna habitat of the application area and Malleefowl record



N.B. the 'Pipeline Corridor' (L26/288) has been excluded from the Application Area.

7.7 Aboriginal and European heritage

7.7.1 Aboriginal Heritage

NKS is situated within the Maduwongga (WC2017/001) and the Marlinyu Ghoorlie (WC2017/007) Native Title claim areas. NKS Freehold land has been subject to an archaeological and ethnographic Heritage Survey.

A number of Department of Planning, Lands and Heritage (DPLH) registered Aboriginal Heritage Sites or Places are within the Application Area (Fig 6). Future development activities will comply with the *Aboriginal Heritage Act 1972*, including any superseding legislation.

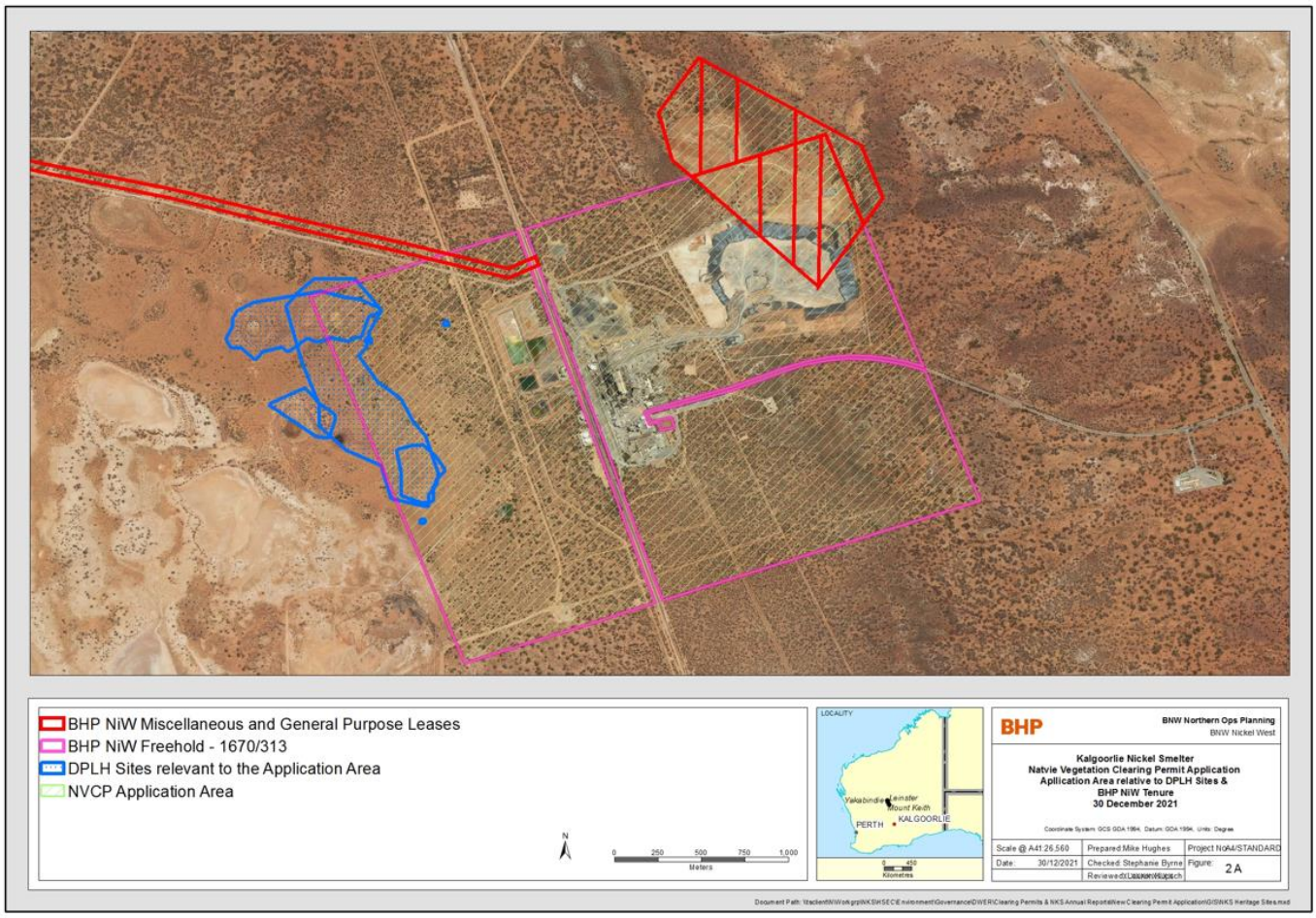
Heritage surveys will be undertaken for any projects which have the potential to impact identified heritage sites and heritage sites will be avoided where possible.

Heritage sites will also be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance.

7.7.2 European Heritage

No DPLH registered European Heritage Sites or Places are within the Project area.

Figure 6: DPLH Sites relevant to the Application Area



8. Environmental Management

8.1 Corporate level plans and procedures

BHP's *Our Charter*, available on the BHP website, outlines BHP's purpose and values and provides measurements for success.

Our Sustainability Approach, also available on the BHP website, is based on the robust identification, assessment and control of material risks across all phases of our business, from exploration to development, operation and closure. *Our Requirements Environment and Climate Change* outlines the minimum environmental management requirements for all our businesses.

BHP NiW manages the environment through the application of the BHP NiW Environmental Management System (EMS). The EMS provides the framework for compliance to legislative requirements, internal operating procedures and corporate standards, as appropriate to the nature and scale of the BHP NiW Operations.

The EMS ensures BHP NiW activities meet applicable legislative and other obligations, are conducted in a manner consistent with the intent of Our Purpose and Charter, Our Approach, Our Requirements and broadly aligned with Australian/New Zealand Standards (AS:NZS) ISO14001:20015.

8.2 Site specific plans and procedures

To support corporate level documents BHP NiW has an internal *Environment Approvals Handover Checklist* (NIW-HSEC-FRM-0009) and an *Environment and Heritage Impact Approval* process. These processes are used to manage any potential environmental impacts of any proposal and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments are clearly communicated and understood prior to and during land disturbance.

All personnel carrying out works associated with clearing activities are required to comply with BHP NiW's organisational level requirements, plans and policies, site level procedures, and any relevant legislative and licensing requirements.

8.3 Impact assessment

As discussed in Section 7, there are no conservation significant flora or fauna species occurring within the application area, and none are expected to occur (due to recent targeted surveying not recording any recent evidence, and none being assessed as "likely" to occur (Biologic 2021)). There are also no confirmed significant ecological communities known from within or surrounding the application area. The vegetation associations and habitats of the application area not unique and are well represented within the local area and the region (Biologic 2021). Additionally, a portion of the application area has already been cleared or disturbed, in association with the existing smelter.

BHP NiW considers that the proposed clearing within the application area will not result in any significant environmental or social impacts, and complies with the Ten Clearing Principles (as demonstrated in the assessment in Section 9).

9. Assessment against the Ten Clearing Principles

An assessment of the application area against the Ten Clearing Principles has been based on the findings of the recently completed flora, vegetation and fauna survey (Biologic 2021).

PRINCIPLE A - Native vegetation should not be cleared if it comprises a high level of biological diversity

The proposed clearing is not at variance to this Principle.

The vegetation within the application area is represented in the same or better condition within the broader region, and is not considered to be of outstanding biodiversity or higher genetic diversity than the remaining native vegetation in the bioregion. The vegetation is contiguous with adjacent native vegetation.

The application area occurs across five vegetation associations, as mapped by Shepherd *et al*. (2002). Coolgardie 9 described as medium woodland: coral gum and Goldfields blackbutt occurs predominantly in the application area. Coolgardie 1294 (medium woodland: coral gum) represents a large strip of the eastern portion of the smelter area and is also present in the corridor area. Coolgardie 936 occurs in the south-western corner of the smelter area and is characterised by medium woodland comprising salmon gum. The remaining two associations, Coolgardie 123 (succulent steppe with open low woodland: sheoak over saltbush and bluebush) and Coolgardie 125 (bare areas: salt lakes) are represented in small areas within the application area. All of these unit have more than 96% of their pre-European extent remaining within the Eastern Goldfields subregion (Biologic 2021).

As detailed in Section 7.5 one of the vegetation types delineated within the application area is considered to be of local importance: S3 (Mid sparse *Duma florentia* shrubland). This vegetation was identified as having affinities to the Priority 3 Emu Land System PEC. This vegetation type occurs across a small portion in the north-west corner of the smelter area within the application area. While this vegetation type occurs beyond the application area in the immediate surrounds, due to its local importance BHP NiW commitment to avoiding this vegetation type, as much as practical.

PRINCIPLE B - Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia

The proposed clearing is not at variance to this Principle.

The habitats within the application area are not considered significant habitat for fauna species within the local area. Similar habitat to that proposed to be cleared is located in the surrounding area with no unique features occurring within the application area. As detailed in Section 7.6, the four habitats identified within the application area are considered to be of low or moderate significance for vertebrate fauna species as they are widespread in the surrounding landscape and/or are not exclusively relied upon by species of conservation significance (Biologic 2021). The clearing of native vegetation is not considered to alter ecological functions and processes that protect significant habitat for fauna.

As discussed in Section7.6, there are no conservation significant fauna currently known from within the application area. Targeted searched identified historical evidence of the Vulnerable species, the Malleefowl (*Leipoa ocellata*); however, no recent evidence was found and Malleefowl are not considered to be utilising the habitats of the application area. This species is not considered likely to be dependent on any of the fauna habitat within the application area (Biologic 2021). No other evidence of conservation significant fauna species were recorded, and none are considered likely to occur (Biologic 2021).

PRINCIPLE C - Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora

The proposed clearing is not at variance to this Principle.

No flora listed under the EPBC Act nor gazetted as Threatened under the BC Act is known from, or recorded in, the application area. The habitats of the application area do not provide habitat to support Threatened flora.

PRINCIPLE D - Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community

The proposed clearing is not at variance to this Principle.

No ecological communities are known from within, or adjacent to, the application area. The vegetation within the application area neither comprises nor is necessary for the maintenance of a threatened ecological community.

As discussed above for Principal A, one vegetation type identified from within the application area (vegetation type S3) was considered to have affinities to the Emu Land System PEC. The vegetation does not represent the PEC; however, is considered of local importance and as such BHP NiW commits to avoiding this vegetation type, as much as practical.

PRINCIPLE E - Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared

The proposed clearing is not likely to be at variance to this Principle.

As discussed above for Principal A, all of the vegetation associations (as mapped by Shepherd *et al*. (2002) for the Coolgardie bioregion) that occur within the application area have more than 96% of their pre-European extent remaining within the Eastern Goldfields subregion and are well represented in the bioregion and subregion (Biologic 2021). As detailed in Section 7.6, the four habitats identified within the application area are widespread in the surrounding landscape (Biologic 2021).

The vegetation and habitats within the application area are well represented in the local area and region. The application area is neither within an extensively cleared region nor will the proposed clearing contribute to a significantly decreased representation of local or regional vegetation types, and the vegetation is not considered a significant remnant of native vegetation in an area that has been extensively cleared.

PRINCIPLE F - Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland

The proposed clearing is not likely to be at variance to this Principle.

The application area does not contain major rivers or watercourses and is likely to only contain surface water for temporary periods of time following substantial rainfall events (Biologic 2021). Two minor non-perennial watercourses intersect the eastern boundary of the area (Section 7.3). There are no permanent watercourses or wetlands within, or associated with, the application area.

PRINCIPLE G Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation

The proposed clearing is not likely to be at variance to this Principle.

Land degradation may include impacts such as erosion, changes to pH, water logging, salinisation or spread of weeds.

Clearing will be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance. Previously cleared / disturbed areas will be prioritised to ensure the clearance of native vegetation is minimised where possible.

No soil will be removed from the application area. All topsoil will be stockpiled and reused for landscaping/ rehabilitation where practical. Clearing and topsoil to be managed in accordance with BHP NiW Topsoil Stripping and Handling Procedure (NIW-HSEC-PRO-0035).

Five introduced flora species (weeds) were recorded within the application area: **Cenchrus ciliaris*, **Echium plantagineum*, **Eragrostis curvila*, **Oligocarpus calendulaceus* and **Salvia verbenaca* (Biologic 2021). None of the weeds are Weed of National Significance. **Echium plantagineum* (Patterson's Curse) is a Declared Pest under Section 22 of the BAM Act, although is exempt from control and keeping requirements. **Eragrostis curvula* is on the priority list for weed management in the Goldfields Region due to it being currently absent from lands managed by

the DBCA. Generally, weed numbers were relatively low, with very few infestations observed (Biologic 2021). Weed control activities are undertaken at site on an as needs basis to control outbreaks.

Weed management will also be managed through the Environment and Heritage Impact Approval process on a project by project basis. This process is used to manage potential environmental impacts and to ensure compliance with regulatory requirements, environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance.

PRINCIPLE H - Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area

The proposed clearing is not likely to be at variance to this Principle.

The application area is not within or adjacent any conservation areas. The closest conservation area is the Goongarrie National Park. This National Park is located on the boundary of the Murchison region approximately 90 km north of Kalgoorlie. The application area is not considered to form an ecological linkage to this conservation area.

PRINCIPLE I - Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water

The proposed clearing is not likely to be at variance to this Principle.

The proposed clearing is not expected to cause deterioration in quality of surface or groundwater. The groundwater of the area is already saline and the limited clearing will not significantly increase surface or groundwater salinity levels. Surface water is an infrequent occurrence in the application area that occurs only after a significant rainfall event and does not persist for extended periods.

PRINCIPLE J - Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding

The proposed clearing is not likely to be at variance to this Principle.

As detailed in Section 7.3, the application area does not contain major rivers or watercourses and is likely to only contain surface water for temporary periods of time following substantial rainfall events (Biologic 2021). Two minor non-perennial watercourses intersect the eastern boundary of the area. Surface drainage flows away from the area toward salt lakes situated on both the east and western flanks (Biologic 2021). The incidence or intensity of flooding is not likely to be significantly influenced by the proposed clearing. It is highly improbable that surface runoff generated from cleared areas could create sufficient concentrated water volumes to cause even a localised flood event.

9.1 Planning and other matters

BHP NiW already holds the relevant authority to apply for and undertake approved or exempt clearing activities within the Kalgoorlie Nickel Smelter and corridor areas.

Approvals under the *Planning and Development Act 2005* will be sought for development with respect to the freehold tenure, as required.

9.2 Conclusion

The proposed clearing within the application area is not likely to be at variance to any of the clearing principles.

BHP NiW will manage the clearing to ensure no direct or indirect significant residual impacts to biodiversity or resultant land degradation occurs. Commitments to ensure no negative residual impacts to biodiversity or soil and land conservation are outlined in Table 2.

10. References

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DPIRD, Department of Primary Industries and Regional Development. (2021b). Soil Landscape Mapping - Systems (DPIRD-064). Retrieved from: https://catalogue.data.wa.gov.au/dataset/soil-landscape-mapping-systems

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Tille, P. (2006). Soil-landscapes of Western Australia's Rangelands and Arid Interior. Department of Agriculture and Food Resource Management Technical Report 313.

APPENDIX 1: Form C2 Application for a Clearing Permit (Purpose Permit)

APPENDIX 2: Tenure Information

PROP_ID	PROP_TYPE	PROP_DESCR	LEGAL AREA	APPLICATION	GRANT DATE	EXPIRY DATE
Granted						
G26/121	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.2535	21/11/1996	05/10/2009	04/10/2030
G26/122	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.9985	21/11/1996	05/10/2009	04/10/2030
G26/123	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.8255	21/11/1996	05/10/2009	04/10/2030
G26/124	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	8.4415	21/11/1996	05/10/2009	04/10/2030
G26/125	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.9685	21/11/1996	16/05/1997	15/05/2039
G26/126	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.9095	21/11/1996	16/05/1997	15/05/2039
G26/127	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	9.8925	21/11/1996	16/05/1997	15/05/2039
G26/128	G (GENERAL PURPOSE LEASE - AUS WA)	DISPOSAL OF RESIDUES FROM KNS	7.902	21/11/1996	16/05/1997	15/05/2039
L26/142	L (MISCELLANEOUS LICENCE - AUS WA)	Road that connects the Smelter to Great Eastern Highway	73	5/07/1989	19/10/1989	18/10/2024
1670/311	FREEHOLD (FREEHOLD PROPERTY - AUS)	Lot 66 on Plan 14433. This property covers the KNS access road (Formerly portion of Hampton Location 100 and marked ROW on Plan 14433)			29/06/1984	
1670/313	FREEHOLD (FREEHOLD PROPERTY - AUS)	Lot 100 on Plan 212288, Portion of Hampton Location 100. This is the site of the Kalgoorlie Nickel Smelter (KNS)	594.72		29/06/1984	
Applications						
L26/288	L (MISCELLANEOUS LICENCE - AUS WA)	Pipeline and Road from NKS to Binduli Offtake covering an existing track and underground water pipeline that supplies potable water to the Kalgoorlie Nickel Smelter	48.7376	10/05/2019		

APPENDIX 3: NVCP Spatial Files