GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8164/1
Permit Holder:	BHP Billion Nickel West Pty Ltd
Duration of Permit:	19 November 2018 – 19 November 2028

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. Purpose for which clearing may be done
Clearing for the purpose of mineral processing.

2. Land on which clearing is to be done
Lot 66 on Deposited Plan 14433, Feysville
Lot 100 on Deposited Plan 212288, Feysville

3. Area of Clearing
The Permit Holder must not clear more than 15 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8164/1.

4. Application
This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II –MANAGEMENT CONDITIONS

5. Avoid, minimise and reduce the impacts and extent of clearing
In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
(a) avoid the clearing of native vegetation;
(b) minimise the amount of native vegetation to be cleared; and
(c) reduce the impact of clearing on any environmental value.

6. Vegetation Management
The Permit Holder shall not clear native vegetation within 30 metres of the *riparian vegetation* of any *watercourse* or *wetland* within the area cross-hatched yellow on Plan 8164/1.

7. Weed Control
When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of weeds:
(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) ensure that no weed-affected soil, mulch, fill or other material is brought into the area to be cleared; and
(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

PART III - RECORD KEEPING AND REPORTING

8. Records must be kept

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this permit:

(a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(b) the date that the area was cleared;
(c) the size of the area cleared (in hectares);
(d) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 5 of this Permit; and
(e) actions taken to minimise the introduction and spread of weeds in accordance with condition 7 of this Permit.

9. Reporting

The Permit Holder must provide to the CEO the records required under Condition 8 of this Permit, when requested by the CEO.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986;*

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

riparian vegetation has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

weed/s means any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
(c) not indigenous to the area concerned.

wetland/s means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary.

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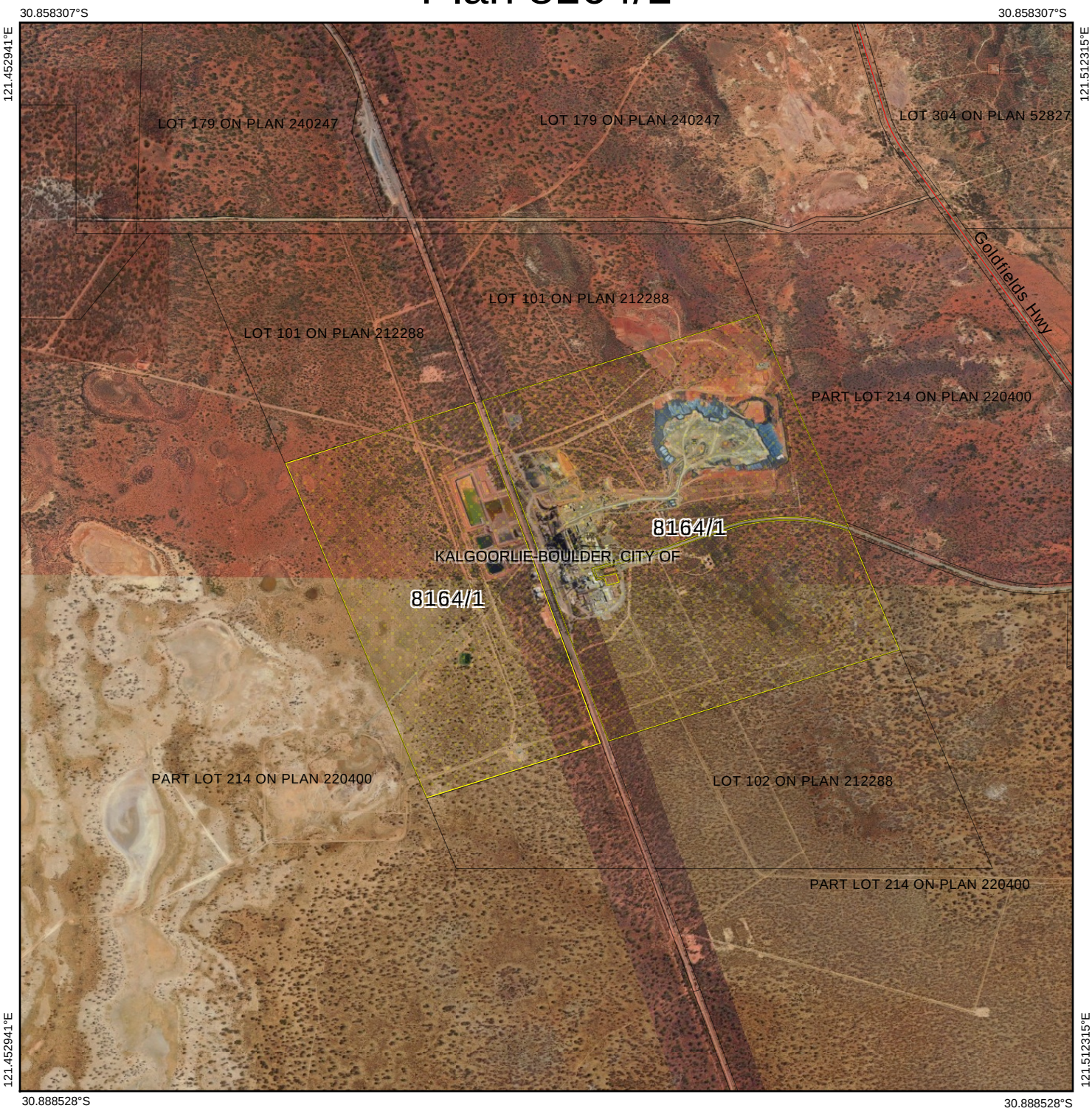
Abbie Crawford
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

25 October 2018

Plan 8164/1



Legend

- Imagery
- Clearing Instruments Activities
- Local Government Authority

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(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

..... Date .....

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8164/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: BHP Billiton Nickel West Pty Ltd

Application received date: 14 August 2018

1.3. Property details

Property: LOT 100 ON PLAN 212288, FEYSVILLE and
LOT 66 ON PLAN 14433, FEYSVILLE
Local Government Authority: City of Kalgoorlie-Boulder
Localities: Feysville

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
15		Mechanical Removal	Mineral production

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 25 October 2018
Reasons for Decision: The clearing permit application was received on 14 August 2018 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance to Principle (f) and is not likely to be at variance to the remaining Principles.

The Delegated Officer noted the historical and current landuse of the clearing footprint area, it's completely degraded to very good (Keighery, 1994) condition and that the clearing footprint area is not considered to comprise a high level of biodiversity.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed management measures.

In determining to grant a clearing permit subject to vegetation manament, weed, avoid and minimise and reporting conditions, the Delegated Officer determined that the proposed clearing is unlikely to lead to any unacceptable impact to the environment.

2. Site Information

Clearing Description The application is to clear 15 hectares of native vegetation within a 694 hectare footprint area within Lot 66 on Plan 14433 and Lot 100 on Plan 212288, Feysville, for the purpose of mineral processing (BHP Billiton, 2018). The applicant has advised that the clearing will be undertaken at a rate of 1.5 hectares per annum.

Vegetation Description The vegetation within the application area comprises low open *Eucalyptus* woodlands and shrublands (Mattiske, 2008) and is mapped as the following Beard vegetation associations (Shepherd et al, 2001):

- 9 - Medium woodland comprising Coral gum (*Eucalyptus torquata*) and Goldfields blackbutt (*E. le soufii*);
- 936 - Medium woodland; salmon gum; and
- 1294 - Medium woodland; coral gum.

Vegetation association 936 comprises approximately 48 hectares of the vegetation in the south-west corner of the clearing footprint, whilst the other two associations comprise the remainder of the application area.

Vegetation Condition Sections of the clearing footprint area have been previously used as, and continue to be used as, a mineral ore processing/mine site, with approximately 148 hectares comprising related infrastructure and internal roads. A previous 2008 clearing assessment (CPS 2602/2) and flora and vegetation survey (Mattiske, 2008) determined that the clearing footprint area varied from being in a completely degraded to very good (Keighery, 1994) condition. Based on current aerial imagery (Virtual Mosaic: Image), this determination remains valid (refer to Figure 1).

Soil type The soils of the application area are mapped as shallow calcareous loamy soils and alkaline red earths with limestone at shallow depths (DPIRD, 2017; Northcote et al., 2001).

Comments The local area considered in the assessment of the application is described as a 20 kilometre radius measured from the application area. The local area retains approximately 70 per cent native vegetation cover.

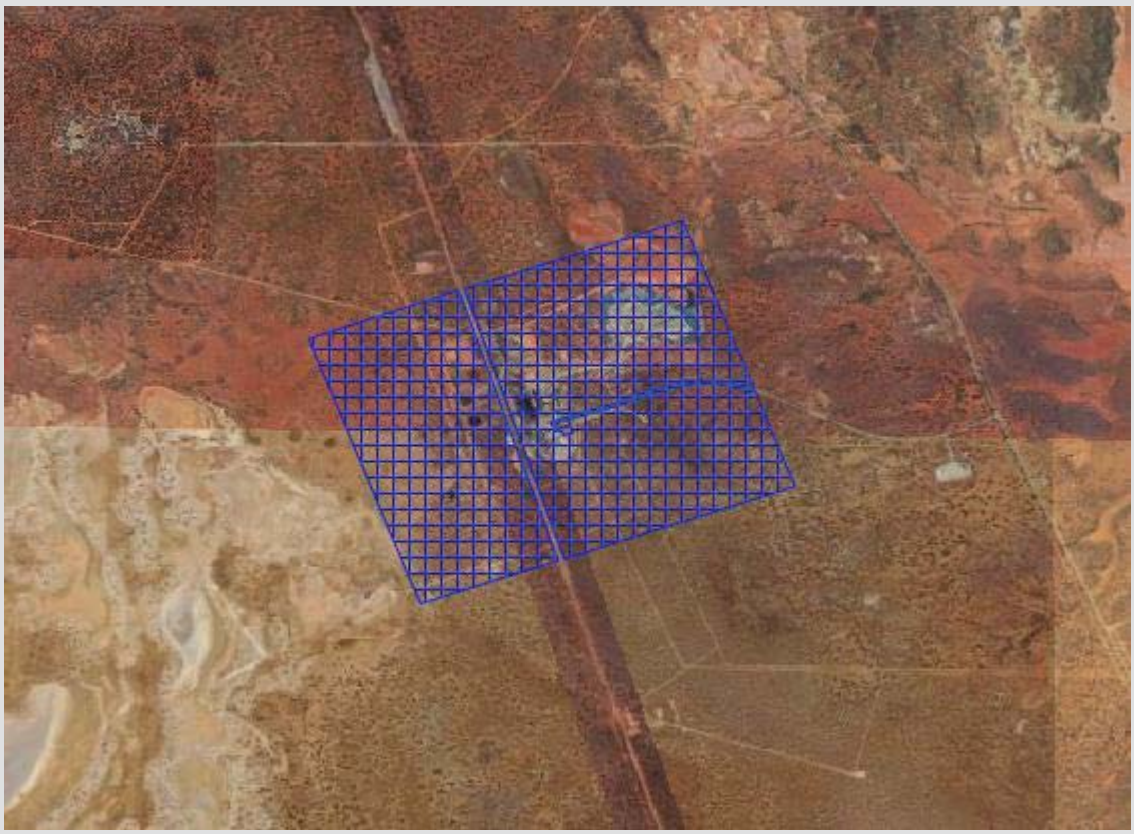

Figure 1 – CPS 8164/1 application area

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing is not likely to be at variance this Principle

The application to clear 15 hectares of native vegetation, within a 694 hectare footprint area, is for the purpose of mineral processing. The applicant has advised that the clearing will be undertaken at a rate of 1.5 hectares per annum. It is noted that approximatley 148 hectares of the footprint already comprises mining/smeltering infrastructure.

Given the historical and current landuse, and as noted in section 2 above, the vegetation within the application area comprises open low woodlands and shrublands, and varies from being in a completely degraded to very good (Keighery, 1994) condition (Mattiske, 2018). Soils are mapped as shallow calcareous loamy soils and alkaline red earths with limestone at shallow depths (DPIRD, 2017; Northcote et al., 2001). A salt lake system occurs adjacent to the western boundy and two others approximately three kiometres north-east and south- east of the eastern boundary of the application area.

According to available datasets, one Priority 1 (P1) listed flora species, one P2 and four P3 species are mapped within the local area (refer Table 1) (WAH, 1998-). None of the flora species are recorded within the application area and none were identified during a 2008 flora and vegetation survey (Mattiske, 2008).

Noting the soil type and landform preferences of these priority species, compared to the mapped soil and landforms present within the application area, it is unlikely these priority flora would occur within the application area (WAH, 1998-).

Table 1 – Flora of conservation significance recorded in the local area.

Species name	Conservation code	Habitat preference (WAH, 1998-)
Ptilotus procumbens	1	Red clay
Goodenia salina	2	Well-drained, saline, grey or brown loamy clay. Low gypseous dunes near salt pans
Alyxia tetanifolia	3	Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.
Isolepis australiensis	3	Silty sand, sandy clay. Lake margins, pools.
Melaleuca coccinea	3	Sandy loam over granite. Granite outcrops, sandplain, river valleys.
Xanthoparmelia dayiana	3	Rock / rock outcrops

No priority ecological communities are mapped within the application area or the local area and none were identified during a 2008 flora and vegetation survey (Mattiske, 2008).

As noted in principle (e), the local area is well vegetated and considered to be in a better (Keighery, 1994) condition compared to the majority of the application area. The mapped Beard vegetation associations and vegetaion remaining within the bioregion retain greater than the 30 per cent recommended threshold. The vegetation within the application area is not considered a significant remnant.

Given the above and the extent of native vegetation remaining within the local area, it is considered that the application area is unlikely to comprise a high level of biodiversity.

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

Proposed clearing is not likely to be at variance to this Principle

According to available datasets, three threatened fauna species are mapped within the local area: *Leipoa ocellata* (malleefowl), *Macrotis lagotis* (bilby) and *Ogyris subterrestris* subsp. *petrina* (arid bronze azure butterfly) (DBCA, 2007-).

The malleefowl is found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or acacias (Benshemesh, J., 2007). A sandy substrate and abundance of leaf litter are required for breeding. Densities of the birds are generally greatest in areas of higher rainfall and on more fertile soils where habitats tend to be thicker and there is an abundance of food plant (Benshemesh, J., 2007).

The bilby is known to occupy three main habitats: open tussock grassland on uplands and hills, *Acacia aneura* (mulga) woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas (Woinarski et al., 2014).

The arid bronze azure butterfly is restricted to mallee vegetation on sandy soil, often near flood plains. It is recorded from two localities in Western Australia: one in the wheatbelt region and the other in the goldfields region (where the application area is

located). The goldfields population, within a recreation reserve (vested in the Shire of Boulder), 12 kilometres southwest of Kalgoorlie was reported to have become extinct in about 1993 (TSSC, 2015).

Given the preferred habitat requirements of these fauna species and noting the current landuse, structure and condition of the vegetation within the application area, it is considered that the application area is unlikely to support these habitat requirements.

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

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Proposed clearing is not likely to be at variance to this Principle

According to available datasets, no rare flora species have been mapped within the application area and none within the local area. A 2008 flora and vegetation survey also did not identify any rare flora species (Mattiske, 2008).

Therefore the proposed clearing is not likely to be at variance to this 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.

Proposed clearing is not likely to be at variance to this Principle

According to available datasets, no threatened ecological communities have been mapped within the application area and none are mapped within the local area. A 2008 flora and vegetation survey also did not identify any such communities (Mattiske, 2008).

Therefore the proposed clearing is not likely to be at variance to this 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.

Proposed clearing is not likely to be at variance to this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located within the Coolgardie Interim Biogeographic Regionalisation of Australia bioregion, which retains approximately 97 per cent of the pre-European vegetation extent. The mapped Beard vegetation associations 9, 936 and 1294 retain approximately 97, 99 and 96 per cent of their pre-European vegetation extent within this bioregion (Government of Western Australia, 2018). The local area retains approximately 70 per cent native vegetation cover. Based on these statistics the application area is not located within an area that has been extensively cleared.

The application area does not contain a high level of biodiversity, significant habitat for indigenous fauna and does not represent a priority or threatened ecological community, therefore it is not considered to be a significant remnant.

Therefore the clearing as proposed is not likely to be at variance to this Principle.

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion:					
Coolgardie	12,912,204	12,648,491	97	2,114,261	16
Beard vegetation associations:					
9	240,441	235,100	97	18,984	8
936	586,792	584,336	99	18,103	3
1294	6,295	6,047	96	114	1

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is at variance to this Principle

According to available datasets, one minor, non-perennial watercourse occurs in the south-east corner of the application area and an area subject to inundation occurs in the northwest corner. No major surface water drainage lines are mapped. The application area straddles a topographical high in the landscape where surface water flows to the west and east across gently undulating surfaces. Drainage paths are poorly defined with no permanent waterways evident (BHP, 2018).

Given the nature of the proposed clearing (clearing will not be confined to one location, but may occur anywhere within the application area), it is unlikley any un-acceptable environmental impacts to these water features will occur.

As some of the vegetation under application includes riparian vegetation, the clearing as proposed is at variance to this Principle.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is not likely to be at variance to this Principle

The soils within the clearing footprint are mapped as shallow calcareous loamy soils and alkaline red earths with limestone at shallow depths (DPRD, 2017; Northcote et al., 2001).

The application area is within a low rainfall area (300mm average annually) and relatively high evapotransporation area (300mm average annually). The soils are not prone to wind or water erosion. Whilst groundwater salinity is mapped at 35,000 mg/L total dissolved salts and the risk of surface salinity occurring is mapped as negligible (DPIRD, 2017).

Given the above, the clearing as proposed is not likely to lead to appreciable land degradation and is not likely to be at variance with this 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.

Proposed clearing is not likely to be at variance to this Principle

Located between seven and twenty kilometres from the application area, there is one timber reserve, one nature reserve and one state forest.

Given the distances between the application area and these conservation areas, the clearing as proposed is not likely to have a direct or in-direct imapct upon these areas.

The clearing as proposed is not likley to be at variance to this 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.

Proposed clearing is not likley to be at variance to this Principle

The application area straddles a topographical high in the landscape where surface water (rainfall) flows to the west and east across gently undulating surfaces. Drainage paths are poorly defined with no permanent waterways. Stormwater from cleared areas will be managed through existing site infrastructure, which will ensure any erosion and potential flooding will be controlled (BHP, 2018).

The clearing of 15 hectares will not be confined to one location or one time period, but will occur over several locations within the application area over the ten year duration of the clearing permit. Therefore, potential impacts, if any, would be localised and short term. The proposed clearing is not likely to lead to a deterioration in the quality of surface or underground water.

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

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be at variance to this Principle

The application area occurs within a low rainfall area (300mm average annually) and relatively high evapotransporation area (300mm average annually). Stormwater from cleared areas will be managed through existing site infrastructure, which will ensure any erosion and potential flooding will be controlled (BHP, 2018).

The clearing of 15 hectares will not be confined to one location or one time period, but will occur over several locations within the application area over the ten year duration of the clearing permit. Therefore, potential impacts, if any, would be localised and short term. It is considered the proposed clearing is not likely to cause or exacerbate, the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The assessment of CPS 8164/1 is required to facilitate BHP's existing smelter operations and to allow for the ongoing expansion of these operations within the application area. This assessment consolidates BHP's expired clearing permits CPS 2602/2 and 2330/2 (BHP, 2018).

BHP reported that a total 12.47 hectares of vegetation, of an approved 15 hectares, was cleared under CPS 2602/2 and that the Nickel West Kalgoorlie Smelter operates under works approval L8653/2012/2.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 19 September 2018 with a 21 day submission period. No public submissions have been received in relation to this application.

4. References

Benshemesh, J. (2007). National Recovery Plan for Malleefowl. Department for Environment and Heritage, South Australia

BHP Billiton Nickel West Pty Ltd (BHP) (BHP) (2018) Application for clearing permit and supporting documentation CPS 8164/1 (DWER Ref: A1711584)

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

Threatened Species Scientific Committee (TSSC)(2015) – Conservation Advice for *Ogyris subterrestris petrina* (arid bronze azure) Threatened Species Scientific Committee Department of Biodiversity, Conservation and Attractions 25 March 2015 (http://environment.gov.au/biodiversity/threatened/species/pubs/77743-conservation-advice.pdf)

Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: http://naturemap.dpaw.wa.gov.au/.

Department of Primary Industries and Regional Development (DPIRD) (2017) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: https://maps.agric.wa.gov.au/nrm-info/ (accessed April 2018).

Government of Western Australia (2018) 2017 State-wide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting (2008) Flora and Vegetation Survey of the Furnace Rebuild Project Area, prepared for BHP Billiton, May 2008 by Mattiske Consulting Pty Ltd KNS0801/048/08

Northcote, K. H. with Beckmann G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Western Australian Herbarium (WAH) (1998-) FloraBase-the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/

Woinarski, J., Burbidge, A. & Harrison, P. (2014). The Action Plan for Australian Mammals 2012. (pp. 203-207). CSIRO Publishing.

GIS Databases:

- Aboriginal Sites of Significance
- Department of Biodiversity, Conservation and Attractions, Tenure
- Groundwater salinity
- Hydrography, General Hydro
- Hydrography, Wetlands
- SAC bio datasets
- TPFL Data
- WAHerb Data
- WA TEC PEC Boundaries
- Virtual Mosaic: Image - (accessed October 2018)