Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8087/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Big Bell Gold Operations Pty Ltd**

1.3. Property details

Property:
Mining Lease 20/17
Mining Lease 20/21
Mining Lease 20/22
Mining Lease 20/78
Mining Lease 20/99
Mining Lease 20/171
Mining Lease 20/192
Mining Lease 20/202
Mining Lease 20/252
Mining Lease 20/354
Mining Lease 21/7
Mining Lease 21/14
Mining Lease 21/44
Mining Lease 21/49
Mining Lease 21/65
Mining Lease 21/75
Mining Lease 21/89
Mining Lease 21/96
Miscellaneous Licence 20/21
Miscellaneous Licence 20/40

Local Government Area: Shire of Cue
Colloquial name: Central Murchison Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
80		Mechanical Removal	Mineral Production and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 16 August 2018

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation of the application area is broadly mapped as the following Beard vegetation associations:

18: Low woodland; mulga (*Acacia aneura*);
39: Shrublands; mulga scrub;
125: Bare areas; salt lakes;
240: Succulent steppe with open scrub; scattered *Acacia sclerosperma* and bowgada over saltbush and bluebush;
268: Succulent steppe with open scrub; scattered *Acacia sclerosperma* over saltbush and bluebush;
313: Succulent steppe with open scrub; scattered *Acacia sclerosperma* and *Acacia victoriae* over bluebush;
1127: Mosaic: Saltbush and bluebush/samphire; and
2081: Shrublands; bowgada and associated spp. scrub (GIS Database).

A Level 1 flora and vegetation survey was conducted over the application area by Outback Ecology during 2012. The following vegetation associations were recorded within the application area (Outback Ecology, 2012b):

Big Bell Area

1. *Acacia aneura* Low Woodland over *Eremophila phyllopoda* Open Shrubland over *Enneapogon caerulescens* Very Open Tussock Grassland on quartz outcrops;
2. *Acacia aneura* Low Open Woodland over *Ptilotus rotundifolius* Open Shrubland over *Ptilotus* spp. Low

Open Shrubland over *Aristida contorta* Tussock Grassland;

3. *Acacia aneura* Low Open Woodland over Scattered Low Shrubs over *Aristida contorta* Tussock Grassland;
4. *Acacia aneura* Low Woodland (variable cover on banks of flow line) over *Acacia tetragonophylla* and *Eremophila* spp. Scattered Tall Shrubs/Shrubs over *Aristida contorta* and *Eragrostis falcata* (in bed of sandy flow line) Tussock Grassland; and
5. Mixed *Acacia* Low Woodland over scattered Tall Shrubland (on flow line banks) over Open Tussock Grassland on sandy flow line channel.

Day Dawn Area

6. *Acacia cyperophylla* var. *cyperophylla* Tall Shrubland over *Eremophila longifolia* Open Shrubland over **Cenchrus ciliaris, *Cynodon dactylon* Tussock Grassland in relatively well defined flow lines;
7. *Acacia aneura* Low Open Woodland over *Acacia tetragonophylla* Tall Open Shrubland over Herbland in poorly defined flow lines;
8. Mixed *Acacia* Tall Open Shrubland over *Eremophila phyllopoda* Open Shrubland – Shrubland over *Ptilotus obovatus* Low Open Shrubland over *Aristida contorta* Very Open Tussock Grassland on low basalt and dolerite rocky rises;
9. *Acacia xiphophylla, Acacia synchronicia* Tall Open Shrubland over mixed Scattered Low Shrubs over *Eriachne* and *Digitaria* Very Open Tussock Grassland. Found on broad drainage areas intersected by sometimes shallowly incised flow lines;
10. *Eremophila phyllopoda* Open Shrubland over *Tecticornia disarticulata* Low Open Shrubland over *Enneapogon caerulescens* and *Acacia contorta* Open Tussock Grassland on a water washed plain;
11. *Acacia aneura* Low Open Woodland over *Hibiscus sturtii* var. *grandiflorus* Low Open to Open Shrubland over *Eragrostis lanipes* Open Grassland. Found on red sand dunes;
12. *Eremophila eriocarpa* Shrubland over *Chenopodium gaudichaudianum* Low shrubland over *Aristida contorta* Open Tussock Grassland;
13. *Tecticornia halocnemoides* Open to Closed Heath over scattered *Dissocarpus paradoxus.* Found on deep saline clay flats with cracking surface;
14. *Tecticornia indica* subsp. *bidens* and *Tecticornia doleiformis* Low Open Heath over *Frankenia* sp. Scattered Low Shrubs; and
15. *Frankenia* spp. Scattered Low Shrubs.

Cuddingwarra Area

16. *Tecticornia disarticulata, Maireana, Sclerolaena* spp., *Solanum lasiophyllum* Low Shrubland over *Aristida contorta* Open Tussock Grassland;
17. *Acacia aneura* and *A. pruinocarpa* Scattered Tall Shrubs over *Arista contorta* Very Open Tussock Grassland; and
18. Mixed Low Open Shrubland over Scattered Herbland and Tussock Grassland on white quartz plain.

* denotes weed species.

Clearing Description

Central Murchison Gold Project
Big Bell Gold Operations Pty Ltd proposes to clear up to 80 hectares of native vegetation within a boundary of approximately 3,789 hectares, for the purpose of mineral production and associated activities. The project consists of the Day Dawn, Cuddingwarra and Big Bell project areas located approximately four kilometres south-west, seven and 25 kilometres north-west of Cue respectively.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

To

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment

The vegetation condition was assessed by botanists from Outback Ecology (2012b).

This clearing permit application is to replace an expired clearing permit CPS 5202/3. Clearing permit CPS 5202/1 was granted on 13 December 2012 and authorised the clearing of 50 hectares within a permit boundary of 427.5 hectares. CPS 5202/1 was amended on 26 April 2013 to increase the permit boundary from 427.5 hectares to 2,250 hectares. CPS 5202/2 was amended on 13 August 2015 to increase the amount of clearing from 50 to 80 hectares and increase the clearing permit boundary from 2,250 hectares to 3,789 hectares. CPS 5202/3 expired on 5 January 2018. No clearing was undertaken under CPS 5202/1, 5202/2 and 5202/3. Therefore CPS 8087/1 does not seek approval for further clearing within the application area.

The project includes pit extensions, expanding waste landforms, dewatering pipelines and lay down areas (Outback Ecology, 2012a). However, the main purpose of this clearing permit is to allow mining of the historic tailings from M20/17. It is anticipated that 61.65 hectares of historic tailings will be removed and transported to the Tuckabianna Mill for reprocessing. As this area has begun to naturally rehabilitate, a native vegetation clearing permit is required to re-disturb this mining area.

3. Assessment of application against Clearing Principles

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

Comments

Proposal is not likely to be at variance to this Principle

The clearing permit application area is located within the Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database).

The flora and vegetation survey undertaken by Outback Ecology (2012b) identified 18 vegetation associations within the application area. There are significant parts of the application area that have been disturbed by past mining and pastoral activities (Outback Ecology, 2012a). None of the vegetation associations within the application area were identified as being a Threatened or Priority Ecological Community (Outback Ecology, 2012b). Part of the dewatering pipeline from the Big Bell area passes through the buffer zone of the 'Lake Austin calcrete groundwater assemblage type on Murchison paleodrainage on Austin Downs Station' Priority Ecological Community (GIS Database). The proposed clearing will not impact on these groundwater assemblages. The Level 1 flora survey of the greater Central Murchison Gold Project recorded a total of 151 flora species from 41 families and 91 genera (Outback Ecology, 2012b). A current biodiversity database search was undertaken over the application area and checked against the Level 1 flora survey report prepared by Outback Ecology (2012b). None of these flora species are Threatened or Priority Flora (DBCA, 2018; Outback Ecology, 2012b).

Ten weed species were recorded during the flora survey (Outback Ecology, 2012b). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Apart from some minor areas of quartz outcrop and drainage lines, the fauna habitats within the application area are common and widespread within the Murchison bioregion (Outback Ecology, 2012a). Given the habitats present and the previous disturbance, the application area is not expected to contain a high level of faunal diversity.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

CALM (2002)
DBCA (2018)
Outback Ecology (2012a)
Outback Ecology (2012b)

GIS Database:
- IBRA Australia
- Threatened and Priority Flora
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened Fauna

(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.

Comments

Proposal may be at variance to this Principle

A Level 1 fauna survey was undertaken by Outback Ecology over the Central Murchison Gold Project in 2012. This survey includes the application area. The fauna survey identified five broad fauna habitats, four of which are present within the application area (Outback Ecology, 2012b):

1. *Acacia* woodland over low heath
2. Open stony plain (quartz)
3. Drainage line
4. Quartz outcrop

All four habitats are present within the Big Bell area and all bar *Acacia* woodland over low heath are present at the Day Dawn area. The Cuddingwarra area only contained open stony plain (quartz) habitat (Outback Ecology, 2012b). All of these habitat types had varying levels of disturbance from past grazing, pastoral and mining activities (Outback Ecology, 2012b). Along with these habitats, there was a significant portion of the application area mapped as disturbed areas which are likely to have little habitat value for local fauna species.

The drainage line and quartz outcrop habitats were identified as being significant fauna habitats (Outback Ecology, 2012b). The drainage line habitat supports denser vegetation that provides shade and shelter as well as an ephemeral water source during substantial rainfall events (Outback Ecology, 2012b). The linear nature of drainage lines helps provide linkages and corridors between habitats in the local area (Outback Ecology, 2012b). The quartz outcrop habitat was found in small isolated areas and represents variation in the often flat

and open landscape (Outback Ecology, 2012b). This habitat has the potential to provide refugia for small mammals and reptiles and also provide a vantage point for birds of prey (Outback Ecology, 2012b). Potential impacts to flora and fauna may be minimised by the implementation of a condition restricting the clearing of the quartz outcrop habitat.

There are a number of conservation significant fauna species that have the potential to occur within the application area;

- Peregrine Falcon (*Falco peregrinus*) – Priority 4;
- Malleefowl (*Leipoa ocellata*) – Vulnerable; and
- Western Spiny-tailed Skink (*Egernia stokesii badia*) – Vulnerable.

The Peregrine Falcon is highly mobile and may possibly occur over the application area intermittently. This species tends to prefer large eucalypts for breeding that are largely absent from the study area, and therefore the application area is unlikely to be a significant habitat. The Malleefowl may intermittently utilise the application area, however, it is not likely to remain in the area for prolonged periods of time as a history of mining and pastoralism has reduced the suitability of the habitat (Outback Ecology, 2012b). The Western Spiny-tailed Skink has been recorded within 20 kilometres of the application area (DBCA, 2018). Isolated patches of Rocky outcrops and small stands of *Acacia* provide some marginal habitat within the application area (Outback Ecology, 2012b). Potential impacts to the Malleefowl and Western Spiny-tailed Skink may be minimised by the implementation of a fauna management condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology DBCA (2018)
Outback Ecology (2012b)

GIS Database:
- Imagery
- Threatened Fauna

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

Comments **Proposal is not likely to be at variance to this Principle**
There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Outback Ecology, 2012b). There are records of the Threatened Flora species *Eremophila rostrata* subsp. *rostrata* and *Eremophila rostrata* subsp. *trifida* within ten kilometres of the Day Dawn and Cuddingwarra project area (DBCA, 2018). The quartz outcrop within the application area has the potential to provide habitat for these Threatened Flora species (Western Australian Herbarium, 2018). Potential impacts may be minimised by the implementation of a condition restricting the clearing of the quartz outcrop habitat.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology DBCA (2018)
Western Australian Herbarium (2018)

GIS Database:
- Pre-European Vegetation
- Threatened and Priority Flora

(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.

Comments **Proposal is not likely to be at variance to this Principle**
There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database). A flora and vegetation survey of the application area did not identify any TECs (Outback Ecology, 2012b).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Outback Ecology (2012b)

GIS Database:
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(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.

Comments

Proposal is not at variance to this Principle

The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations **18:** Low woodland; mulga (*Acacia aneura*); **39:** Shrublands; mulga scrub; **125:** Bare areas; salt lakes; **240:** Succulent steppe with open scrub; scattered *Acacia sclerosperma* and bowgada over saltbush and bluebush; **268:** Succulent steppe with open scrub; scattered *Acacia sclerosperma* over saltbush and bluebush; **313:** Succulent steppe with open scrub; scattered *Acacia sclerosperma* and *Acacia victoriae* over bluebush; **1127:** Mosaic: Saltbush and bluebush/samphire; and **2081:** Shrublands; bowgada and associated spp. scrub (GIS Database). Over 90% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2018).

Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands
IBRA Bioregion – Murchison	28,120,586	28,044,823	99	Least Concern	7.78
Beard vegetation associations – WA					
18	19,892,306	19,843,729	99	Least Concern	6.62
39	6,613,567	6,602,578	99	Least Concern	12.02
125	3,485,785	3,146,487	90	Least Concern	9.29
240	119,107	119,107	~100	Least Concern	36.43
268	15,547	15,547	~100	Least Concern	4.87
313	68,843	65,261	94	Least Concern	0.00
1127	69,078	69,078	~100	Least Concern	18.01
2081	1,331,683	1,320,818	99	Least Concern	15.12
Beard vegetation associations – Murchison Bioregion					
18	12,403,172	12,363,252	99	Least Concern	4.96
39	1,148,400	1,138,064	99	Least Concern	3.56
125	711,483	710,255	99	Least Concern	7.20
240	106,950	106,950	~100	Least Concern	39.81
268	8,454	8,454	~100	Least Concern	-
313	68,843	65,261	94	Least Concern	0.00
1127	69,078	69,078	~100	Least Concern	18.01
2081	390,399	389,895	99	Least Concern	20.96

* Government of Western Australia (2018)
** Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Department of Natural Resources and Environment (2002)
Government of Western Australia (2018)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

There are several minor ephemeral drainage lines that pass through the application areas (GIS Database). A number of drainage lines in the Big Bell area have been realigned due to past mining activities (Outback Ecology, 2012a). The vegetation associations four and five were identified as being associated with drainage lines in the Big Bell area, and vegetation associations six and nine were identified as being associated with drainage lines in the Day Dawn area (Outback Ecology, 2012a). No vegetation associations were identified as being associated with drainage lines in the Cuddingwarra area (Outback Ecology, 2012b). There are also a number of drainage lines that are crossed by the Big Bell dewatering pipeline, however, this is positioned within previously disturbed areas so there will be minimal impact to watercourses (Outback Ecology, 2012a). There is 1.45 hectares of vegetation proposed to be cleared for the Day Dawn dewatering pipeline, of which only 0.3 hectares is associated with a watercourse (Outback Ecology, 2012a).

The vegetation associated with drainage lines within the application areas cover a small percentage of the area. Given that the drainage lines in the Big Bell area have already been modified by previous mining activities, there is not likely to be significant additional impacts from the proposed clearing.

Both of the dewatering pipelines finish on the shore of Lake Austin (GIS Database). Given the size of Lake Austin, the proposed clearing will not have a significant impact on the fringing vegetation of the lake.

Based on the above, the proposed clearing is at variance to this Principle**.** Potential impacts to vegetation growing in association with the watercourse may be minimised by the implementation of a watercourse management condition.

Methodology

Outback Ecology (2012a)
Outback Ecology (2012b)

GIS Database:
- Hydrography, Lakes
- Hydrography, linear

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

Comments

Proposal may be at variance to this Principle

The application area lies within the Austin, Carnegie, Challenge, Gabanintha, Mileura, Norie and Yanganoo land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

- The Austin land system is described as saline stony plains with low rises and drainage foci supporting low halophytic shrublands with scattered mulga (Curry et al., 1994). This land system is generally not susceptible to erosion, however, the removal of vegetation on drainage tracts can lead to increased erosion (Curry et al., 1994).

- The Carnegie land system is described as salt lakes with extensive fringing saline plains, dunes and sandy banks, supporting low halophytic shrublands and scattered tall acacia shrublands (Curry et al., 1994). The Carnegie land system is generally not susceptible to erosion (Curry et al., 1994). Only a small part of the dewatering pipelines are located on the Carnegie land system.

- The Challenge land system is described as gently sloping gritty and sandy-surfaced plains with granite outcrops and minor breakaways, supporting mulga and some halophytic shrublands (Curry et al., 1994). The Challenge land system is not normally susceptible to accelerated erosion except on alluvial footslopes and drainage tracts (Curry et al., 1994). Only a small portion of the Big Bell area is located on the Challenge land system.

- The Gabanintha land system is described as ridges, hills and footslopes of various metamorphosed volcanic rocks (greenstones), supporting sparse acacia and other mainly non-halophytic shrubland. This land system is generally not susceptible to erosion (Curry et al., 1994). The historic tailings to be removed for re-processing at the Tuckabianna Mill is situated within this land system (GIS Database).

- The Mileura land system is described as saline and non-saline calcreted river plains, with clayey flood plains interrupted by raised calcrete platforms supporting diverse and very variable tall shrubland,

mixed, halophytic shrubland and shrubby grassland (Curry et al., 1994). Landform units with duplex soils are moderately to highly susceptible to erosion, those with loam over hardpan are less susceptible to erosion and calcrete platforms are not normally susceptible (Curry et al., 1994). The only part of the application area that is situated on the Mileura land system is part of the Big Bell dewatering pipeline. The pipeline is located on areas of previous disturbance so there will be minimal clearing of this land system.

- The Norie land system is described as granite hills with exfoliating domes and extensive tor fields, supporting acacia shrublands. This land system is slightly susceptible to erosion in drainage tracts and alluvial fans (Curry et al., 1994). There is only a small portion of this land system present in the Big Bell area.

- The Yanganoo land system is described as almost flat hardpan wash plains, with or without small wanderrie banks and showing variable development of weak groving, supporting mulga shrublands. The hardpan plains of the Yanganoo land system are locally susceptible to accelerated erosion when severely degraded (Curry et al., 1994).

The proposed clearing will not remove a large amount of vegetation from within drainage lines (Outback Ecology 2012a). The historic tailings is situated entirely within the Gabanintha land system that is not generally susceptible to erosion (GIS Database). In the areas that may be susceptible to erosion, the potential impacts may be minimised by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology Curry et al. (1994)
Outback Ecology (2012a)

GIS Database:
- Landsystem Rangelands

(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.

Comments **Proposal is not likely to be at variance to this Principle**
Part of the application area is located within the former Lakeside Pastoral Lease which is managed by the Department of Biodiversity, Conservation and Attractions (DBCA) (GIS Database). There is approximately a two kilometre stretch of the Big Bell dewatering pipeline that passes onto the former Lakeside lease area as it discharges into Lake Austin. This represents approximately 2.5 hectares of the application area (GIS Database). The proposed clearing is not likely to have a significant impact on the environmental values of the former Lakeside lease. Big Bell Gold Operations Pty Ltd should undertake measures to ensure that any clearing does not lead to the introduction or increased spread of weeds within the area. Potential impacts from weeds may be minimised by the successful implementation of a weed management condition.

Based on the above the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- DEC Managed Lands

(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.

Comments **Proposal is not likely to be at variance to this Principle**
There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). The proposed clearing will not impact on any permanent water bodies, however, there are a number of ephemeral watercourses within the application area (GIS Database). Many of these watercourses flow into Lake Austin (GIS Database). The proposed clearing within these drainage lines may lead to short term increase in turbidity, however, it is not likely to result in the deterioration of surface water quality. Big Bell Gold Operations Pty Ltd plans to control turbidity through the use of settling basins which will intercept flows from mined areas and remove sediment before being discharged into the natural drainage lines (Outback Ecology, 2012a).

The groundwater in the local area has been recorded between 3,000 and 20,000 milligrams per litre of total dissolved solids (Rockwater, 2011 cited in Outback Ecology, 2012a). The proposed clearing is not likely to cause salinity levels within the application or surrounding areas to alter.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Outback Ecology (2012a)

GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

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

Comments

Proposal is not likely to be at variance to this Principle

The climate of the region is semi-arid, with a low average rainfall of approximately 233.9 millimetres and an average annual evaporation rate of 3,400 millimetres. Given this, there is likely to be little surface flow during normal seasonal rains (BOM, 2018; GIS Database). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BOM (2018)

GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, linear

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

The clearing permit application was initially advertised on 25 June 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS). It was readvertised on 23 July 2018 as there was a change in the proposed permit boundary. Both advertising periods invited submissions from the public. Two submissions were received in relation to this application. One submission was in relation to the assessment of potential environmental impacts from the proposed clearing. A written response was provided on the matter raised, and potential environmental impacts have been addressed under the relevant clearing principles. The second submission was in relation to the purpose of the clearing. A written response was provided to clarify the purpose of the clearing as outlined in Section 2 of this Clearing Permit Decision Report (Site Information).

There are two native title claims over the area under application (DPLH, 2018). These claims (WC2004/010 and WC1999/046) have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are two registered Aboriginal Sites of Significance within the application area (DPLH, 2018). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

Methodology DPLH (2018)

4. References

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Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P. and Blood, D.A. (1994) Technical Bulletin - An Inventory and Condition Survey of the Murchison River Catchment and Surrounds, Western Australia, No. 84. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

DBCA (2018) NatureMap - Mapping Western Australia Biodiversity. Department of Biodiversity, Conservation and Attractions. https://naturemap.dpaw.wa.gov.au/ (Accessed 29 June 2018).

DPLH (2018) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 3 July 2018).

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Outback Ecology (2012a) Central Murchison Gold Project Clearing Permit Application. Report for Westgold Resources Ltd prepared by Outback Ecology Services, 10 July 2012.
Outback Ecology (2012b) Central Murchison Gold Project Level 1 Vegetation, Flora and Fauna Assessment. Report for Westgold Resources Ltd prepared by Outback Ecology Services, 9 July 2012.
Western Australian Herbarium (2018). FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/ (Accessed 3 July 2018).

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950,* listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act 1950*.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the *Wildlife Conservation Act 1950*.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR **Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as

Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA **Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 **Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are

close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.