Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5684/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Cameco Australia Pty Ltd**

1.3. Property details

Property: Exploration Licence 45/2690
Exploration Licence 45/2691
Local Government Area:
Colloquial name: Kintyre Rocks Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
35		Mechanical Removal	Mineral Exploration

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 September 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Beard vegetation associations have been mapped over much of Western Australia. The following Beard vegetation associaitons occur within the application area:

- 99; Hummock grasslands, shrub steppe; *Acacia coriacea* & *hakea* over hard spinifex, *Triodia basedowii*; and
- 117; Hummock grasslands, grass steppe; soft spinifex.

Clearing Description

Kintyre Rocks Project.
Cameco Australia Pty Ltd proposes to clear up to 35 hectares of native vegetation within a defined boundary of approximately 11,283.1 hectares, for the purposes of mineral exploration. The project is located approximately 200 kilometres east south east of Nullagine in the Shire of East Pilbara.

Vegetation Condition

Pristine: pristine or nearly so, no obvious signs of disturbance (Keighery, 1994);

to

Degraded: basic vegetation structure serverely impacted by disturbance (Keighery, 1994).

Comment

Vegetation condition based on the results of flora and vegetation surveys undertaken over some parts of the application area and surronding mineral leases. The vegetation condition of the surveyed areas was assessed using condition scales based on Trudgen (1988) and Keighery (1994). The vegetation condition recorded within the surveyed areas was converted to corresponding conditions from the Keighery (1994) scale.

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 may be at variance to this Principle**

The application area is situated within the Rudall sub-region of the Little Sandy Desert bioregion as described within the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). The Rudall sub-region consists of sparse shrub-steppe over *Triodia basedowii* on stony hills with River Gum communities and bunch grasslands on alluvial deposits in and associated with ranges (Department of Conservation and Land Management, 2002). Extensive areas of tussock grass are associated with foot slopes and River Gum communities occur along drainage lines (Department of Conservation and Land Management, 2002). Extensive *Triodia* hummock grasslands occur on hills and surrounding plains (Department of Conservation and Land Management, 2002).

Part of the application area was originally a component of the Karlamilyi National Park (Formerly Rudall River National Park) which was proclaimed a Class A Reserve in 1977, for the purposes of conserving the arid river system and environment of the Rudall River, and listed on the Register of the National Estate in 1978 (Cameco Australia Pty Ltd, 2013). This part of the application area exists within the 151 km^2 area excised from the National Park in 1994 (Cameco Australia Pty Ltd, 2013). The Rudall River National Park boundary contained in the Register of the National Estate was not updated to reflect this excision of land from the National Park and therefore part of the application area remains within the area listed on the Register of the National Estate (Cameco Australia Pty Ltd, 2013).

A flora and vegetation survey of the whole application area has not been undertaken. Parts of the application area which were subject to mineral exploration were surveyed in 2007 and 2008 by Astron Environmental Services (Astron Environmental Services, 2007; 2008). An adjacent lease area which was also targeted for mineral exploration was surveyed by Bennett Environmental Consulting Pty Ltd between 2007 and 2010 (Bennett Environmental Consulting Pty Ltd, 2010).

The surveys undertaken by Astron Environmental Services recorded 95 vegetation associations in 2007 and 52 vegetation associations in 2008 (Astron Environmental Services, 2007; 2008). Twenty eight of the vegetation associations recorded during the 2008 survey were recorded during the 2007 survey (Astron Environmental Services, 2008). The vegetation recorded during these surveys was mostly in excellent condition with the exception of larger creeks and creek flood banks which contained buffel grass grasslands and old overgrown exploration tracks in the eastern part of the survey area (Astron Environmental Services, 2007; 2008). Thirty four vegetation associations were identified during the survey work undertaken by Bennett Environmental Consulting Pty Ltd, with the condition of these vegetation associations ranging from excellent to degraded (Bennett Environmental Consulting Pty Ltd, 2010). No Threatened Ecological Communities or Priority Ecological Communities were identified in the surveyed areas (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010).

A total of 318 and 196 native flora taxa were recorded during the surveys undertaken by Astron Environmental Services in 2007 and 2008 respectively, whilst 323 native plant taxa were recorded during the survey work undertaken by Bennett Environmental Consulting Pty Ltd (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010). The families with the greatest representation were *Poaceae*, *Fabaceae*, *Malvaceae*, *Papilionaceae*, *Mimosaceae*, *Chenopodiaceae*, *Caesalpiniaceae* and *Asteraceae* (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010). No threatened flora taxa were recorded during these surveys (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010). Tentative identifications of one priority flora species; *Thysanotus* sp. Desert East of Newman (R.P. Hart 964) (Priority 2), were recorded during the surveys undertaken by Astron Environmental Services, although these recordings could not be confirmed as the observed plants did not feature the distinctive flowering parts needed to confirm the species identification (Astron Environmental Services, 2007; 2008). Following the 2007 survey, it was concluded that *Thysanotus* sp. Desert East of Newman (R.P. Hart 964) was probably sparsely scattered, but not uncommon, on the plains of the surveyed area (Astron Environmental Services, 2007; 2008). *Comesperma pallidum* (Priority 3) was recorded during the survey work undertaken by Bennett Environmental Consulting Pty Ltd (Bennett Environmental Consulting Pty Ltd, 2010). A search of Department of Environment and Conservation databases by Bennett Environmental Consulting Pty Ltd prior to the commencement of the survey work identified 29 Priority Flora species which could occur in the surveyed area and surround's (Bennett Environmental Consulting Pty Ltd, 2010). It is therefore possible that the proposed clearing could impact upon Priority Flora species. The implementation of a Priority Flora management condition will minimise the impact of the clearing on regional biodiversity.

The following range extensions were recorded during the flora and vegetation surveys; *Acacia trudgeniana*, *Aristida hygrometrica*, *Abutilon trudgenii*, *Mollugo cerviana*, *Corymbia hamersleyana* and *Triodia epactia* (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010). The following weed species were recorded during the flora and vegetation survey's; Buffel Grass (*Cenchrus ciliaris*), Whorled Pigeon Grass (*Setaria verticillata*), Bitter Melon (*Citrullus lanatus*), Kapok Bush (*Aerva javanica*), Beggar's ticks (*Bidens bipinnata*) and Ulcardo Melon (*Cucumis melo* subsp. *agrestis*) (Astron Environmental Services, 2007; 2008; Bennett Environmental Consulting Pty Ltd, 2010). The implementation of a weed management condition could minimise the impact of clearing on regional biodiversity.

Cameco Australia Pty Ltd commissioned Bamford Consulting Ecologists in 2010 and 2012 to conduct targeted

fauna surveys of the Kintyre Uranium Mine project area and other areas subject to mineral exploration (Bamford Consulting Ecologists, 2010; 2012). These surveys targeted areas in close proximity to the application area (within 20 kilometres of the application area), but did not target the application area. During the 2012 fauna survey 81 fauna species consisting of; one frog, six reptile, 56 bird, 12 native mammal and six introduced mammal species were recorded (Bamford Consulting Ecologists, 2012). Several fauna species of conservation significance were recorded within the surveyed areas, including the Northern Quoll (*Dasyurus hallucatus*) (Schedule 1, Endangered) (Bamford Consulting Ecologists, 2012). Furthermore, a rock wallaby species; either the Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) (Schedule 1, Vulnerable) or Rothschild's Rock-Wallaby (*Petrogale rothschildi*) were recorded in the surveyed area due to the presence of scats and tracks (Bamford Consulting Ecologists, 2010; 2012).

The Northern Quoll and Rock Wallaby recordings are significant as they occur outside these species known distributions (Bamford Consulting Ecologists, 2010; 2012). Therefore, the occurrence of the Northern Quoll and Rothschild's Rock-Wallaby and/or the Black-flanked Rock Wallaby in the surveyed area is considered important (Bamford Consulting Ecologists, 2012).

The application area occurs within the Rudall River which is classified as a Priority 1 Wild River (Department of Water, 2000).Wild rivers are representative of largely unchanged natural systems and considered to of value due to their rarity, often diverse and productive habitat, as a source of high quality water and their scientific value (Department of Water, 2000). The Rudall River has been assigned a Priority 1 classification on the basis of no or minimal impacts to the river system from the activities of European man (Department of Water, 2000).

When the above factors are considered, the application area could constitute an area of high biological diversity. However, the proponent has sought to clear 35 hectares within an application area approximately 11,283.1 hectares in size. As only approximately 0.3% of the application area will be impacted by clearing activities, it is unlikely clearing will adversely impact the environmental values of the application area as much of this area will remain intact.

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

Methodology

Astron Environmental Services (2007)
Astron Environmental Services (2008)
Bamford Consulting Ecologists (2010)
Bamford Consulting Ecologists (2012)
Bennett Environmental Consulting Pty Ltd (2010)
Cameco Australia Pty Ltd (2013)
Department of Conservation and Land Management (2002)
Department of Water (2000)
GIS Database
-IBRA WA (Regions – Sub Regions)

(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.

Bamford Consulting Ecologists conducted fauna surveys of the Kintyre Uranium Project area and surrounding areas in 2010 and 2012. No fauna surveys of the application area have been undertaken. The following conservation significant fauna species were recorded during the 2010 and 2012 fauna surveys; Greater Bilby (*Macrotis lagotis*) (Schedule 1, Vulnerable), Northern Marsupial Mole (*Notoryctes caurinus*) (Schedule 1, Endangered), Northern Quoll (*Dasyurus hallucatus*) (Schedule 1, Endangered), Peregrine Falcon (*Falco Peregrinus*) (Schedule 4), Australian Bustard (*Ardeotis australis*) (Priority 4), Bush Stone-curlew (*Burhinus grallarius*) (Priority 4) and the Rainbow bee-eater (*Merops ornatus*) (Schedule 3, Migratory) (Bamford Consulting Ecologists, 2010; 2012).These fauna surveys also determined that a rock wallaby species; either the Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) (Schedule 1, Vulnerable) or Rothschild's Rock-Wallaby (*Petrogale rothschildi*) could occur in the surveyed area due to the presence of scats and tracks (Bamford Consulting Ecologists, 2010; 2012). A species of Mulgara; either the Crest-tailed Mulgara (*Dasycercus cristicauda*) (Schedule 1, Vulnerable) or the Brush-tailed Mulgara (*Dasycercus blythi*) (Priority 4) was also determined to be present within the surveyed areas (Bamford Consulting Ecologists, 2010; 2012).

The Bilby and Mulgara require sand plain, sandy loam and sand dune habitats where the soil substrate can support burrows (Bamford Consulting Ecologists, 2012). Potentially suitable Greater Bilby and Mulgara habitat occurs extensively within the region surrounding the surveyed areas, however these species abundance may be restricted by recent fires and the presence of feral predators (Bamford Consulting Ecologists, 2010; 2012).Within the local area sandy landscapes with the potential to support the Greater Bilby and Mulgara have been mapped (Bamford Consulting Ecologists, 2012). These landscapes are present within the application area; therefore the potential exists for both species to occur in the application area.

While no occurrences of the Northern Quoll were recorded in close proximity to the application area, rocky landscapes that may provide suitable habitat for this species, including potential denning habitat, are present within the application area (Bamford Consulting Ecologists, 2012). As this species is highly mobile and may

disperse widely during favourable conditions (Bamford Consulting Ecologists, 2012), this species could occur within the application area.

The Marsupial Mole occurs within sand dune and swale country with spinifex grassland (Bamford Consulting Ecologists, 2012). This species appears to be widespread in the local area with records from Telfer and Nifty, and is likely to be widely distributed throughout the sand dune fields within the local area (Bamford Consulting Ecologists, 2012).

Occurrences of Rock-wallaby scats and tracks have been recorded in the surrounding region and rocky habitats similar to those where Rock-wallaby scats and tracks have been recorded occur in the application area according to fauna habitat mapping prepared by Bamford Consulting Ecologists (Bamford Consulting Ecologists, 2012). Therefore, the potential exists for Rock-wallabies to occur in the application area.

Whilst the Great Desert Skink (*Liopholis kintorei*) (Schedule 1, Vulnerable) was not recorded during the fauna surveys, this species may occur in areas of suitable habitat (sand-dune and swale country with spinifex grassland) within the local region (Bamford Consulting Ecologists, 2012). Therefore, this species could occur in the sandy habitats identified in the application area during the fauna mapping undertaken by Bamford Consulting Ecologists (Bamford Consulting Ecologists, 2012).

A review of available databases determined that the Peregrine Falcon, Australian Bustard, Bush Stone-curlew and the Rainbow Bee-eater enjoy a widespread distribution in Western Australia (DEC, 2013). As such the application area is unlikely to constitute significant habitat for these species.

The implementation of a fauna management condition will minimise the impact of clearing on fauna species of conservation significance.

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

Methodology DEC (2013)
Bamford Consulting Ecologists (2010)
Bamford Consulting Ecologists (2012).

(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.**

Only one threatened flora species is known to occur within the Little Sandy Desert IBRA Region; *Thryptomene wittweri* (Western Australian Herbarium, 2013). This species is known to occur on skeletal red stony soils, breakaways and stony creek beds (Western Australian Herbarium, 2013).

The nearest recorded occurrence of *Thryptomene wittweri* to the application area is situated 330 kilometres to the southwest of the application area (GIS Database) and no threatened flora taxa were recorded during the flora and vegetation surveys. In addition, the fauna habitat mapping undertaken by Bamford Consulting Ecologists (2012) suggests the application area consists of rocky and sand plain habitats which this species does not appear to be suited to.

Any potential impacts to threatened flora will be managed through a flora management condition.

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

Methodology Bamford Consulting Ecologists (2012)
Western Australian Herbarium (2013)
GIS Database:
-Threatened and Priority Flora
-IBRA WA (Regions – Sub Regions).

(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.**

The application area is not situated within a Threatened Ecological Community (TEC) (GIS Database). The closest TEC to the application area is the Ethel Gorge aquifer stygobiont community (Department of Environment and Conservation, 2013), situated approximately 235 kilometres to the southwest of the application area.

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

Methodology Department of Environment and Conservation (2013)
GIS Database:
-Threatened Ecological Sites

(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 is situated within the Rudall sub-region of the Little Sandy Desert region as described in the IBRA and contained within the Beard Vegetation associations 99 and 117 (GIS Database). These Beard vegetation associations retain 100% of their pre-European extent for the Rudall sub-region (see table below). Hence, the application areas vegetation does not represent a significant remnant of vegetation within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Land
IBRA Bioregion – Rudall	991,277.06	989,325.42	~99.8	Least Concern	37.35
Beard veg assoc. – State					
99	528,692.35	528,692.35	100	Least Concern	~27
117	919,517.05	886,004.92	~96.4	Least Concern	~13
Beard veg assoc. – Bioregion					
99	461,480.28	461,480.28	100	Least Concern	~31
117	191,412.37	191,412.37	100	Least Concern	~44

* Government of Western Australia (2013)
** Department of Natural Resources and Environment (2002).

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

Methodology Government of Western Australia (2013)
Department of Natural Resources and Environment (2002)
GIS Database:
-Pre-European vegetation
-IBRA WA (Regions – Sub-regions).

(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.**

The application area does not intercept any permanent watercourses or wetlands (GIS Database). However, numerous ephemeral watercourses traverse through the application area (GIS Database). As exploration activities within the application area are likely to intercept ephemeral watercourses, the riparian vegetation communities associated with these watercourses are likely to be impacted by the proposed clearing. Based on the above, the proposal is at variance to this Principle.

Cameco Australia Pty Ltd have applied to clear 35 hectares of vegetation within an area approximately 11,283.1 hectares in size. As only approximately 0.3% of the application area will be cleared, it is not anticipated that the clearing activities will adversely impact the conservation status or distribution of riparian vegetation communities or the integrity of watercourses. However, it is important to avoid clearing riparian vegetation where possible and ensure that the natural surface water flows are maintained. Potential impacts to watercourses as a result of the clearing may be minimised by the implementation of a watercourse management condition.

Methodology GIS Database:
-Hydrography, Linear Properties

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

Comments **Proposal is not likely to be at variance to this Principle.**

The application area is situated in an area of considerable geological variation with sand plains, small areas of clay pan deposits and hills dissected by broad valleys of alluvial and eolian sand plain occurring in the region (Astron Environmental Services, 2007). The habitat mapping undertaken by Bamford Consulting Ecologists in 2012 depicted rocky and sand plain habitat as occurring within the application area (Bamford Consulting Ecologists, 2012). The presence of sand plains within the application area suggests some parts of the application area could be vulnerable to erosion resulting from clearing.

The clearing activities will result in the disturbance of a 35 hectare area within an application area approximately 11,283.1 hectares in size and therefore only approximately 0.3% of the application area will be cleared. The clearing of approximately 0.3% of the application area is not expected to increase the incidence of erosion within the application area or lead to significant landscape degradation.

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

Methodology Astron Environmental Services (2007)
Bamford Consulting Ecologists (2012).

(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.**

The Karlamilyi National Park (formerly Rudall River National Park) is located immediately to the south, east and west of the application area (Cameco Australia Pty Ltd, 2013).This National Park was proclaimed a Class A reserve in 1977 for the purposes of conserving the arid river system and environment of the Rudall River (Cameco Australia Pty Ltd, 2013). The Rudall River National Park was placed on the Register of the National Estate in 1978 (Register of the National Estate, 2013).

The Rudall River National Park is listed on the Australian Heritage Database as maintaining on-going geomorphic and ecological processes within a tropical desert environment (Register of the National Estate, 2013). The National Park contains a large number of landform types and vegetation communities representative of the south western Great Sandy Desert and the north eastern Little Sandy Desert (Register of the National Estate, 2013). The National Park is also a significant transition zone for flora and fauna between the Great Sandy Desert to the north, the Little Sandy Desert to the south and the semi-arid Pilbara to the west (Register of the National Estate, 2013). A diverse range of habitats exist in this National Park, resulting in a diverse flora assemblage, with over 400 species of flora recorded in the National Park (Register of the National Estate, 2013). The flora species assemblage found in the National Park represents over half of the known flora of the Great Sandy Desert (Register of the National Estate, 2013). The Rudall River system acts as a refuge for species of flora and fauna which are uncommon or rare in the Great Sandy Desert region (Register of the National Estate, 2013).The National Park is of regional significance for maintaining bird populations and contains a diverse bird species assemblage, with 79 bird species recorded in or very close to the National Park; roughly 90% of the bird species found within the Great Sandy Desert (Register of the National Estate, 2013). The National Park periodically acts as an important waterbird habitat with large numbers of water birds using Lake Dora (Register of the National Estate, 2013). An important population of the Greater Bilby also exists on the eastern side of Lake Dora (Register of the National Estate, 2013).

In 1991 Rio Tinto presented a formal submission to the Director General, Department of Minerals and Energy, regarding excising an area of 162 km^2 from the Karlamilyi National Park, including part of the application area (Cameco Australia Pty Ltd, 2013). The boundaries of this excision followed the geology and geomorphology of the Yandagooge Inlier, a separate catchment to the Rudall River catchment (Cameco Australia Pty Ltd, 2013). In 1994 the Western Australian State Government approved the excision of 151km^2 from the National Park and compensatory land was added along the Western Boundary of the National Park (Cameco Australia Pty Ltd, 2013). The National Park boundary listed within the Register of the National Estate was not amended to reflect the change to the boundary of the Karlamilyi National Park, and therefore part of the application area is contained within the Register of the National Estate (Cameco Australia Pty Ltd, 2013).

The proposed clearing activities are surficial and localised in nature and as such are unlikely to directly impact the environmental values of the Karlamilyi National Park. However, the occurrence of clearing activities in close proximity to the National Park could result in weed species being introduced to the National Park. Potential impacts from weed species being introduced to the National Park may be minimised by the implementation of a weed management condition.

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

Methodology Cameco Australia Pty Ltd (2013)
Register of the National Estate (2013).

(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.**

The application area is not situated within a Public Drinking Water Source Area (PDWSA) (GIS Database). The closest PDWSA to the application area is the Nullagine water reserve located 192 kilometres west-northwest of the application area. The proposed clearing activities are surficial in nature and are not expected to result in adverse impacts to the quality of any groundwater sources underlying the application area.

The application area intercepts numerous ephemeral watercourses which would only be expected to flow during severe rainfall events and cyclonic conditions (GIS Database). It is likely that during these conditions these surface water flows would contain a sediment load. The clearing activities could result in an increase in the sediment load carried by these surface water flows, but increases in surface water sediment loads would not be expected to adversely impact surface water quality. In addition, the clearing activities are temporary in nature and will require rehabilitation at the completion of the exploration programme. Therefore, any increase in the sediment load carried by surface water flows as a result of the clearing activities will be temporary in nature.

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

Methodology GIS Database:
-Public Drinking Water Source Areas
-Hydrography, linear properties.

(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 application area is situated within the Sandy Desert – Lake Dora catchment which has an area of approximately 29,276,949.7 hectares (GIS Database). The clearing of a 35 hectare area within this catchment is not expected to cause or exacerbate flooding within this catchment area.

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

Methodology GIS Database:
-Hydrographic catchments.

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

There is one Native Title Claim (WC1996/078) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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 registered Aboriginal Sites of Significance in the vicinity of the application area (GIS Database). 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 Environment Regulation (formerly the Department of Environment and Conservation) and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 22 July 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology GIS Database:
-Aboriginal Sites of Significance
-Native Title Claims – Determined by the Federal Court.

4. References

Astron Environmental Services (2007) Kintyre Rocks Exploration Programme Flora & Vegetation Survey – July 2007.

Astron Environmental Services (2008) Kintyre Rocks Uranium Project 2007 Flora & Vegetation Survey Report Addendum April 2008.

Bamford Consulting Ecologists (2010) Targeted fauna survey for the Kintyre Uranium Mine Project.

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Bennett Environmental Consulting Pty Ltd (2010) Flora and vegetation Kintyre Lease.

Cameco Australia Pty Ltd (2013) Clearing Permit Application – Kintyre Rocks (E45/2690 and E45/2691).

DEC (2013) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: http://naturemap.dec.wa.gov.au/. Accessed August 2013

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

Register of the National Estate (2013) Rudall River National Park (1978 boundary), Rudall River via Telfer, WA, Australia. http://www.environment.gov.au/cgi-bin/ahdb/search.pl (Accessed September 2013).

Department of Environment and Conservation (2013) List of Threatened Ecological Communities endorsed by the Western Australian Minister for the Environment. Sourced from http://www.dpaw.wa.gov.au/.

Department of Water (2000) Water notes; Wild Rivers in Western Australia.

Western Australian Herbarium (2013) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. http://florabase.dpaw.wa.gov.au/ (Accessed September 2013).

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
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
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	**Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	**Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	**Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	**Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	**Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the

Environment, after recommendation by the State's Endangered Flora Consultative Committee.

X **Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

Schedule 1 **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.

Schedule 2 **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.

Schedule 3 **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

Schedule 4 **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna.* Department of Conservation and Land Management, Como, Western Australia} :-

P1 **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P2 **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P3 **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P4 **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

P5 **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999)*

EX **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CR **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.