



1. Application details

1.1. Permit application details

Permit application No.: 4132/6
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Sandfire Resources NL

1.3. Property details

Property: Mining Lease 52/1046
Miscellaneous Licence 52/122
Miscellaneous Licence 52/146
Local Government Area: Shire of Meekatharra
Colloquial name: DeGrussa Copper-Gold Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 14 August 2014

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 for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (GIS Database):

- 18: Low woodland; mulga (*Acacia aneura*); and
- 29: Sparse low woodland; mulga & *Acacia victoriae* in scattered groups.

The application area was surveyed by Mattiske Consulting (2010) over 2009 and 2010. The following seven vegetation types were recorded in the application area:

S1: Open scrub of *Grevillea berryana*, *Acacia aneura* var. *aneura* and *Acacia kempeana* over *Eremophila incisa*, *Eremophila margarethae*, *Eremophila forrestii* subsp. *forrestii*, *Ptilotus obovatus* and *Ptilotus schwartzii* over *Aristida contorta* and *Monachather paradoxus* on red/brown sandy loam flats with dolerite, ironstone and quartz pebbles;

S2: Low woodland of *Acacia aneura* var. *aneura* and *Grevillea berryana* over *Eremophila incisa* and *Ptilotus* species on red/brown sandy loam flats with ironstone pebbles;

LW1: Low woodland of *Acacia aneura* var. *aneura*, *Acacia macraneura*, *Acacia pruinocarpa* and *Grevillea berryana* over *Eremophila foliosissima*, *Eremophila forrestii* subsp. *forrestii* and *Eremophila galeata* over *Ptilotus* species and mixed grasses on red/brown sandy loam flats on ironstone pebbles;

LW2: Open low woodland of *Acacia aneura* var. *aneura*, *Acacia cuthbertsonii* subsp. *linearis* and *Acacia tetragonophylla* over *Eremophila galeata*, *Eremophila margarethae* over *Ptilotus* and *Senna* species on red/brown sandy loam flats with quartz pebbles;

C1: Open scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia kempeana* and *Acacia tetragonophylla* over *Psyrdrax latifolia*, *Senna artemisioides* subsp. *helmsii*, *Eremophila galeata*, *Ptilotus obovatus* and *Solanum lasiophyllum* over mixed herbs and grasses on flow-lines with dolerite and ironstone pebbles on red/brown clay loam;

C2: Low open woodland of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia craspedocarpa*, *Acacia tetragonophylla* over *Eremophila galeata* over *Alternanthera nodiflora* and *Cyperus ?centralis* over mixed grasses with occasional emergent *Eucalyptus victrix* on flow-lines with dolerite and ironstone pebbles on red/brown sandy loam gravel; and

C4: Scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia macraneura*, *Acacia cyperophylla* over *Psyrdrax latifolia*, *Eremophila galeata*, *Ptilotus obovatus* and mixed grasses with occasional emergent *Corymbia candida* subsp. *dipsodes* on flow-lines with ironstone and dolerite pebbles on red clay loam.

Clearing Description	DeGrussa Copper-Gold Project. Sandfire Resources NL (Sandfire) proposes to clear up to 450 hectares of native vegetation within a total boundary of 1,329.5 hectares for the purpose of mineral production. The project is located approximately 138 kilometres north-east of Meekatharra, in the Shire of Meekatharra.
Vegetation Condition	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); to: Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).
Comment	The application to increase the amount of clearing authorised is intended to facilitate the development of a solar facility on-site. Clearing permit CPS 4132/1 was granted by the Department of Mines and Petroleum on 17 February 2011 and authorised the clearing of 242 hectares of native vegetation within a boundary of 1,324.5 hectares for the purpose of mineral production. CPS 4132/1 was amended on 14 July 2011 to increase the amount of clearing authorised to 302 hectares. CPS 4132/2 was amended on 26 July 2012 to increase the amount of clearing authorised to 412 hectares. CPS 4132/3 was amended on 22 November 2012 to increase the amount of clearing authorised to 418 hectares. Clearing Permit CPS 4132/4 was amended on 16 May 2013 to amend the permit reporting date and reporting period.

3. Assessment of application against clearing principles

Comments

On 3 July 2014, Sandfire Resources NL applied to increase the area to be cleared from 418 hectares to 450 hectares and extend the duration of the permit to 12 March 2021. The application boundary remains unchanged.

The application area is partly located within the Doolgunna former pastoral lease, which is managed by the Department of Parks and Wildlife (DPaW), formerly the Department of Environment and Conservation (DEC) (GIS Database). DPaW have advised that targeted searches for Priority flora should be undertaken if clearing is planned within unsurveyed areas, and that infrastructure should be located in areas which minimise impacts on Priority flora as much as practicable (DEC, 2012). The application area contains the Priority flora *Hemigenia tysonii* (P3), first identified during a baseline vegetation survey (Mattiske, 2010). Post construction activities in association with the DeGrussa Project identified additional clusters of this species, and Sandfire have therefore commissioned a detailed mapping report of *H. tysonii* within the application boundary. Mapping results included field assessments of populations and found individuals of *H. tysonii* to be in a variety of growth stages, with recruitment evident in some areas despite impacts from clearing and grazing (Sandfire, 2014a). Sandfire has advised that the solar facility for which the increase in clearing has been applied for is planned to avoid all areas occupied by *H. tysonii* (Sandfire, 2014b).

According to available databases, approximately 2.8 hectares of the application area intersects the Priority 1 Ecological Community 'Doolgunna calcrete groundwater assemblage type on Gascoyne palaeodrainage on Doolgunna Station' (GIS Database). Mining is considered to be the primary threat to this PEC (DEC, 2013). However, the proposed clearing intersects the edge of the boundary for this PEC, and it is unlikely that the proposed clearing will impact the assemblages of invertebrates in groundwater calcrete.

Based on the above, the proposed clearing is not likely to be at variance to Principle (a) and may be at variance to Principle (h).

The proposed location for the additional clearing within the application boundary intersects a small portion of the riparian vegetation community C1 (Sandfire, 2014b). However, this vegetation community is common on both a local and regional scale, and the proposed increase in clearing will not impact its conservation.

Based on the above, the proposed clearing is at variance to Principle (f).

The application area occurs within the Beasley, Horseshoe and Three Rivers land systems (GIS Database). Of these, only the Three Rivers land system is considered to be susceptible to erosion. However, an increase in 32 hectares of clearing over a total area of 1,329.5 hectares is unlikely to cause significant land degradation. A weed condition is pre-existing on the clearing permit to address the potential for land degradation as a result of weed proliferation.

Based on the above, the proposed clearing may be at variance to Principle (g).

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), may be at variance to Principles (g) and (h), is not likely to be at variance to Principles (a), (b), (c), (d), (i) and (j) and is not at variance to Principle (e).

Methodology DEC (2012)
DEC (2013)
Mattiske (2010)

Sandfire (2014a)
Sandfire (2014b)
GIS Database:
- DEC Tenure
- Rangeland Land System Mapping
- Threatened Ecological Sites Buffered

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

Comments

There are two native title claims over the area under application (WC99/46 and WC06/02) (GIS Database). These claims 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*.

According to available databases there are no registered Aboriginal Sites of Significance within 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, the Department of Parks and Wildlife 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 14 July 2014 by the Department of Mines and Petroleum (DMP) inviting submissions from the public. There were no submissions received.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

- DEC (2012) Advice provided to the assessing officer by the Department of Environment and Conservation on 6 July 2012.
DEC (2013) Priority Ecological Communities for Western Australia. Species and Communities Branch, Department of Environment and Conservation, Perth.
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 (2010) Flora and Vegetation Survey of the Doolgunna Project. Unpublished report prepared for Sandfire Resources NL, June 2010.
Sandfire (2014a) Priority 3 Species Vegetation Mapping Project – *Hemigenia tysonii*. Sandfire Resources NL, Perth.
Sandfire (2014b) Further information provided to the assessing officer by Sandfire Resources NL on 14 July 2014.

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

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.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

