Government of Western Australia
Department of Mines and Petroleum

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 4490/1
**Permit type:** Purpose Permit

### 1.2. Proponent details

**Proponent's name:** **Hamersley Iron Pty Ltd**

### 1.3. Property details

**Property:** *Iron Ore* (*Hamersley Range*) *Agreement Act 1963*, Mineral Lease 4SA (AML 70/4)
**Local Government Area:** Shire of Ashburton
**Colloquial name:** Wee One Drilling Program

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 0.91 | | Mechanical Removal | Mineral Exploration |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 25 August 2011

## 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. One Beard vegetation association is located within the application area (GIS Database):

**Beard vegetation association 567:** hummock grasslands, shrub steppe; Mulga and Kanji over soft Spinifex and *Triodia basedowii*.

A flora and vegetation survey has been conducted by Rio Tinto Iron Ore (Rio Tinto) over an area that included the application area in February 2011. The flora assessment identified the following vegetation communities within the survey area (Rio Tinto, 2011):

**Stony Hillslopes (Relatively Undisturbed)**

**H1**
*Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Petalostylis labicheoides*, *Acacia maitlandii*, *Senna glutinosa* shrubland over *Triodia wiseana* open hummock grassland.

**H2**
*Eucalyptus leucophloia* low woodland over *Petalostylis labicheoides*, *Acacia maitlandii*, *Gossypium robinsoni* closed scrub over *Triodia wiseana* open hummock grassland over *Themeda triandra* very open tussock grassland.

**H3**
*Eucalyptus leucophloia* low open woodland over *Petalostylis labicheoides*, *Acacia exilis* shrubland over *Indigofera ixocarpa* low open heath over *Triodia wiseana* scattered hummock grass over *Eriachne mucronata* very open tussock grassland.

**Stony Undulating Plains (Relatively Disturbed)**

**S1**
*Acacia aneura* low closed woodland over *Rhagodia eremaea* open shrubland over *Triodia pungens* open hummock grassland.

**S2**
*Eucalyptus socialis*, *Eucalyptus xerothermica* low woodland over *Acacia citrinoviridis*, *Gossypium robinsoni*, *Petalostylis labicheoides* high shrubland over *Triodia pungens*, *Triodia wiseana* hummock grassland over *Eriachne mucronata* open tussock grassland.

**S3**
*Acacia pruinocarpa*, *Acacia aneura* high shrubland over *Acacia bivenosa*, *Eremophila forrestii* open shrubland over *Triodia pungens* open hummock grassland over *Themeda triandra*, *Cenchrus ciliaris* open tussock grassland.

**Clearing Description**

Hamersley Iron Pty Ltd (Hamersley Iron) proposes to clear up to 0.91 hectares of native vegetation. The application areas are located approximately 8 kilometres south of Tom Price (GIS Database).

The purpose of the proposed clearing is for mineral exploration (Hamersley Iron, 2011). Vegetation will be cleared by dozer with the blade down and vegetation will be stockpiled for use in rehabilitation (Hamersley Iron, 2011).

**Vegetation Condition** Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994);

to

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

**Comment** The vegetation condition rating is derived from a flora and vegetation survey conducted by Rio Tinto in February 2011.

## 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 application area is located within the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is described by CALM (2002) as being rich in *Acacia*, *Triodia*, *Ptilotus* and *Sida* species.

A flora and vegetation survey was conducted by Rio Tinto over an area that included the application area in February 2011. Rio Tinto (2011) reports that a total of 78 native vascular plant taxa from 38 genera belonging to 24 families were recorded in the study area. The most dominant families were *Fabaceae* and *Poaceae* (Rio Tinto, 2011). Rio Tinto botanists perceive this level of diversity to be within the expected range for an area of this size in this locality and to represent average species richness for this locality (Rio Tinto, 2011).

One weed species was recorded within the application areas; Buffel Grass (*Cenchrus ciliaris*) (Rio Tinto, 2011). The presence of weed species lowers the biodiversity value of the area. It is important to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The vegetation and landforms present within the application areas are well represented within the Pilbara bioregion (Rio Tinto, 2011). No Declared Rare Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application areas during the flora and vegetation surveys (Rio Tinto, 2011). Given the low impact of the proposed exploration activities, the small amount of clearing proposed (0.91 hectares) and the narrow, linear pattern of the application areas, it is considered unlikely that the proposed clearing areas would host a high level of flora or fauna diversity.

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

**Methodology**

CALM (2002)
Rio Tinto (2011)
GIS Database:
- IBRA WA (Regions - Subregions)

### (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 is not likely to be at variance to this Principle**

Rio Tinto conducted a desktop flora and fauna search and an on-ground flora survey over an area that included the application areas in February 2011. No significant fauna habitats such as caves, rock piles, waterholes, significant creeklines, wetlands, termite mounds, sandy banks or significant tree hollows were observed within the survey area (Rio Tinto, 2011).

The proposed clearing of 0.91 hectares is spread across two separate application areas in a narrow linear pattern. Considering this and that the habitats found within the application areas are widespread throughout the region, it is considered unlikely that the vegetation of the application areas would represent significant habitat for any fauna species.

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

**Methodology** Rio Tinto (2011)

### (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**

According to available databases there are no Declared Rare Flora (DRF) within the application areas (GIS

Database).

A flora and vegetation survey of the application areas, was conducted by Rio Tinto in February 2011. No Declared Rare Flora species were recorded within the survey area during the survey (Rio Tinto, 2011).

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

**Methodology** Rio Tinto (2011)
GIS Database:
- Declared Rare and Priority Flora list

**(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) within the areas applied to clear (GIS Database). The nearest known TEC is located approximately 20 kilometres north-west of the application areas (GIS Database).

Rio Tinto (2011) reports that no TECs were identified within the application areas during the flora and vegetation survey.

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

**Methodology** Rio Tinto (2011)
GIS Database:
- Threatened Ecological Sites Buffered

**(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 areas fall within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.9% of the pre-European vegetation still exists within the Pilbara bioregion (see table below). The vegetation within the application areas is recorded as the following Beard vegetation association (Shepherd, 2009):

**Beard vegetation association 567:** hummock grasslands, shrub steppe; Mulga and Kanji over soft Spinifex and *Triodia basedowii*.

According to Shepherd (2009) approximately 100% of this vegetation association still exists within the bioregion (see table below).

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in IUCN Class I-IV Reserves |
|---|---|---|---|---|---|
| IBRA Bioregion - Pilbara | 17,804,193 | 17,785,001 | ~99.9 | Least Concern | ~6.3 |
| Beard vegetation associations - State | | | | | |
| 567 | 777,507 | 777,507 | ~100 | Least Concern | 22.3 |
| Beard vegetation associations - Bioregion | | | | | |
| 567 | 776,824 | 776,824 | ~100 | Least Concern | 22.4 |

* Shepherd (2009)
** Department of Natural Resources and Environment (2002)

The vegetation within the application areas is not a remnant of native vegetation within an area that has been extensively cleared.

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

**Methodology** Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (Regions ? Subregions)

**(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 not likely to be at variance to this Principle**

According to available databases there are no permanent watercourses or waterbodies within the application areas and Rio Tinto (2011) has not mapped any vegetation communities that are associated with watercourses within the application areas. However, according to available databases, there are several minor ephemeral drainage lines that transect the southern-most application area (GIS Database). These watercourses are only likely to flow following significant rainfall.

Given that the 0.91 hectares of proposed clearing is for low impact activities and will occur in a narrow, linear pattern, the proposed clearing is unlikely to have a significant impact on native vegetation growing in association with a watercourse.

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

**Methodology**

Rio Tinto (2011)
GIS Database:
- Hydrography, linear

**(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 areas have been mapped as occurring within the Newman and Platform land systems (GIS Database).

Van Vreeswyk et al. (2004) reports that neither of these land systems are susceptible to erosion.

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

**Methodology**

Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland land system mapping

**(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 proposed clearing is not located within any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is Karijini National Park located approximately 10 kilometres east of the application areas (GIS Database).

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

**Methodology**

GIS Database:
- DEC Tenure

**(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 areas are not located within a Public Drinking Water Source Area (GIS Database).

The application areas are located within an arid environment. No permanent waterbodies or watercourses occur within the application areas, however there are several ephemeral drainage lines that cross the southernmost application area (GIS Database). Surface water runoff is only likely to occur during and immediately following significant rainfall events. The removal of 0.91 hectares of native vegetation and the shallow ground disturbance related to this clearing is unlikely to cause deterioration in the quality of surface or underground water.

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

**Methodology**

GIS Database:
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

**(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**

According to available databases there are several minor, ephemeral watercourses that transect the

southernmost application area (GIS Database).

Natural flood events occur seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (Rio Tinto, 2011). The ephemeral watercourses within the application area could experience natural flooding from the runoff of surface water following significant rainfall events, however, the proposed clearing of 0.91 hectares across two separate application areas, is unlikely to increase the incidence or intensity of flood events.

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

**Methodology** Rio Tinto (2011)
GIS Database:
- Hydrography, linear

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

**Comments**

There are no Native Title claims over the areas under application (GIS Database). The mining tenure has been granted in accordance with the future act regimes 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 areas (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 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 was advertised by the Department of Mines and Petroleum on 25 July 2011, inviting submissions from the public. No submissions were received.

**Methodology** GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

## 4. References


CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

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.

Hamersley Iron (2011) Clearing Permit Application Supporting Documentation. Hamersley Iron Pty Ltd, Western Australia.

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

Rio Tinto (2011) Flora and Vegetation Survey for RC Drilling at Wee One Deposit within Tom Price. Native Vegetation Clearing Permit Supporting Report. Unpublished report. Rio Tinto Iron Ore, Western Australia.

Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P. and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.


## 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.