



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3132/2
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: Tom Price Infrastructure Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
27.3		Mechanical Removal	Expansion of the Jundumunnah Village and construction of a waste water treatment plant

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 at a 1:250,000 scale for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd, 2009).

567: Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii*.

The application area was surveyed by Biota Environmental Sciences Pty Ltd staff on 2-3 September 2008 and Pilbara Iron staff on 30-31 October 2008 (Rio Tinto, 2009; Biota Environmental Sciences Pty Ltd, 2008). The following vegetation types were identified within the application area:

Vegetation of Stony Undulating Plains:

Acacia aneura woodlands/shrublands (AA): *Acacia aneura* var. *microcarpa* low woodland with scattered *Eucalyptus xerothermica* low trees, over *Acacia aneura* and *Acacia pruinocarpa* tall shrubland, over *Rhagodia eremaea* and *Eremophila forrestii* shrubland, over *Ptilotus obovatus*, *Dipteracanthus australasicus*, and *Maireana georgei* low open shrubland, over open to very open *Themeda triandra* and *Chrysopogon fallax* tussock grassland with very open *Triodia wiseana* hummock grassland;

Mulga Groves (MG): *Acacia aneura* var. *microcarpa* low open forest to tall open scrub with scattered *Eucalyptus xerothermica* low trees, over *Rhagodia eremaea* and *Capparis umbonata* scattered shrubs, over *Rhagodia eremaea* and *Dipteracanthus australasicus* low open shrubland over *Themeda triandra* scattered to very open tussock grassland and *Triodia wiseana* very open to scattered hummock grassland;

Acacia aneura woodlands/shrublands with Eucalyptus socialis (AAEs): *Acacia aneura* var. *microcarpa* low woodland with sparse *Eucalyptus socialis* ssp. *eucentrica* mallee, over *Acacia aneura* and *Acacia pruinocarpa* tall shrubland, over *Rhagodia eremaea* and *Eremophila forrestii* shrubland, over mixed low open shrubland, over very open *Themeda triandra* tussock grassland with open *Triodia wiseana* hummock grassland;

Disturbed Acacia aneura woodland/shrubland (AAd): *Acacia aneura* var. *microcarpa* low woodland, over *Acacia aneura* and *Acacia pruinocarpa* tall shrubland, over *Rhagodia eremaea* and *Eremophila forrestii* open shrubland, over *Ptilotus obovatus* and *Maireana georgei* low open shrubland (with sometimes extensive patches (20-40% cover) of mixed *Maireana* and *Sclerolaena* species), over open to very open *Themeda triandra* and *Cenchrus ciliaris* tussock grassland with very open *Triodia wiseana* hummock grassland;

Disturbed Road verge - Medium to tall mixed shrubland/woodland (MWSd): Scattered low trees of *Eucalyptus leucophloia* ssp. *leucophloia* and *Eucalyptus xerothermica*, over open heath to tall open scrub changing in places to shrubland/tall shrubland typically dominated by species such as *Petalostylis labicheoides*, *Acacia bivenosa*, *Acacia synchronicia*, *Acacia pruinocarpa*, *Capparis umbonata*, and *Eremophila longifolia*, over mixed low open shrubland, over open tussock grassland of *Cenchrus ciliaris* and mixed grasses, over *Triodia wiseana* open to very open hummock grassland;

Drainage depression - Tussock grassland/herbland (TG): *Sesbania cannabina* and *Stemodia grossa* mixed low open shrubland, over mixed open tussock grassland of *Aristida inaequiglumis*, *Chrysopogon fallax*, *Paspalidium basicladum*, and *Eragrostis tenellula* with scattered mixed herbs such as *Centipeda minima*;

Plains (AanAprReCEc): *Acacia aneura*, *Acacia pruinocarpa* Low open forest over *Rhagodia eremaea* shrubland over *Cenchrus ciliaris* tussock grassland;

Plains (ElabTw): *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* open shrubland to tall open shrubland over *Triodia wiseana* hummock grassland.

Vegetation of Drainage Areas (MF - Minor Flowlines)

Minor Flowline - poorly defined channel (MF1): *Eucalyptus xerothermica* low open forest with scattered *Acacia aneura* var. *aneura* low trees, over *A. bivenosa*, *A. sclerosperma* ssp. *sclerosperma* and *A. citrinoviridis* tall open shrubland, over *A. sclerosperma* ssp. *sclerosperma* and *Petalostylis labicheoides* shrubland, over mixed scattered low shrubs, over *Themeda triandra* open tussock grassland with very open *Triodia wiseana* hummock grassland;

Minor Flowline/drainage area with undefined channel (MF2): *Eucalyptus xerothermica* low open forest with scattered *Acacia aneura* var. *aneura* low trees, over *Acacia aneura* var. *aneura* and *A. citrinoviridis* tall open shrubland, over mixed scattered low shrubs, over *Cenchrus ciliaris* (and *Themeda triandra*) tussock grassland (to open tussock grassland) with scattered *Triodia wiseana* hummock grasses;

Vegetation of Rocky Hills (RR - Ridges and Ranges)

Hill slopes and crests - Small hill/low rise (HS1): *Eucalyptus leucophloia* ssp. *leucophloia* low woodland with scattered patches of *Eucalyptus socialis* ssp. *eucentrica* open mallee, over *Acacia aneura* var. *microcarpa* and *A. pruinocarpa* tall open shrubland, over open shrubland of mixed *Acacia* spp. and *Petalostylis labicheoides*, over *Triodia wiseana* hummock grassland;

Lower slopes/Footslopes (HS2): *Eucalyptus xerothermica* low open woodland, over *Eucalyptus socialis* ssp. *eucentrica* open mallee, over *Acacia synchronicia* and *A. bivenosa* shrubland to low shrubland (with scattered *Petalostylis labicheoides*), over *Triodia wiseana* hummock grassland; and

Hill slope/Low rise mulga groves (HSMG): *Acacia aneura* low open forest to tall open scrub with scattered *Eucalyptus leucophloia* ssp. *leucophloia* low trees, over *Petalostylis labicheoides*, and *Eremophila latrobei* ssp. *filiformis* open shrubland, over *Triodia wiseana* open hummock grassland (Rio Tinto, 2009).

Thirteen alien weed species were recorded within the application area (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009). These were: Kapok Bush (*Aerva javanica*), Common Sowthistle (*Sonchus oleraceus*), Spiked Malvastrum (*Malvastrum americanum*), Buffel Grass (*Cenchrus ciliaris*), Birdwood Grass (*Cenchrus setiger*), Whorled Pigeon Grass (*Setaria verticillata*), Ruby Dock (*Acetosa vesicaria*), Red Natal Grass (*Melinis repens*), Indian Hedge Mustard (*Sisymbrium orientale*), Black Berry Nightshade (*Solanum nigrum*), Bipinnate Beggartick (*Bidens bipinnata*), Couch (*Cynodon dactylon*) and Mimosa Bush (*Vachellia farnesiana*) (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009).

Clearing Description Hamersley Iron Pty Ltd intend to clear up to 27.3 hectares of native vegetation within a boundary of approximately 45.5 hectares for the purposes of expanding the Jundumunnah Village and constructing a Waste Water Treatment Plant. The existing Jundumunnah Village is located on the outskirts of the Tom Price township (Rio Tinto, 2009).

Vegetation Condition Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment The application area is located in the Pilbara region, approximately 4 kilometres south-west of Tom Price.

The vegetation of the application area is classified as degraded due to previous disturbance from the existing Jundumunnah Village. The vegetation condition was derived from a vegetation survey conducted by Biota Environmental Sciences Pty Ltd (2008).

Clearing permit CPS 3132/1 was granted by the Department of Mines and Petroleum on 25 June 2009, and is valid from 25 July 2009 to 31 July 2014. The clearing permit authorised the clearing of 27.3 hectares of native vegetation. An application for an amendment to clearing permit CPS 3132/1 was submitted by Hamersley Iron Pty Ltd on 17 February 2011. The proponent has requested that the boundary in which the clearing is to occur be increased from 39.9 hectares to 45.5 hectares. No increase in size is required to the area of native vegetation to be cleared. There were no additional environmental impacts as a result of this amendment.

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 occurs within the Hamersley (PIL3) subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils on the ranges (CALM, 2001).

A vegetation survey of the application area and surrounding vegetation identified 181 flora species belonging to 82 genera from 36 families (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009). Mimosaceae (25), Poaceae (18), Malvaceae (13) and Chenopodiaceae (13) families are particularly diverse within the survey area (Biota Environmental Sciences Pty Ltd, 2008).

Thirteen alien weed species were recorded within the vegetation survey area (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009). 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 in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food (DAFWA). Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

An area search of the Department of Environment and Conservation's online fauna database conducted by the assessing officer suggests that the application area is diverse in reptile species (DEC, 2009). The database search found 60 reptile species as potentially occurring within the application area, or within a 20 kilometre radius of the application area.

The application area has suffered from previous disturbance as the application area includes the existing Jundumunnah Village (Biota Environmental Sciences Pty Ltd, 2008). The landforms, vegetation and habitat types occurring within the application area are well represented within the surrounding region (Biota Environmental Sciences Pty Ltd, 2008; Shepherd et al, 2009). Given the past disturbances within the application area, it is not likely to have greater diversity than similar areas within the region.

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

Methodology Biota Environmental Sciences Pty Ltd (2008)
CALM (2001)
DEC (2009)
Rio Tinto (2009)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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**

The assessing officer has conducted a search of the Department of Environment and Conservation's online fauna database between the coordinates 117.5664 °E, 22.5315 °S and 117.9789E, 22.9299 °S, representing a 20 kilometre radius around the application area.

This search identified 7 Amphibian, 18 Mammalian, 45 Avian and 60 Reptilian species that may occur within the search area (DEC, 2009). Of these, the following species of conservation significance has previously been recorded within the search area: Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*), Australian Bustard (*Ardeotis australis*), *Amytornis striatus* subsp. *striatus*, Peregrine Falcon (*Falco peregrinus* subsp. *macropus*), Short-tailed Mouse (*Leggadina lakedownensis*), Western Pebble-mound Mouse (*Pseudomys chapmani*) and the Long-tailed Dunnart (*Sminthopsis longicaudata*).

Rio Tinto (2009) and Biota Environmental Sciences Pty Ltd (2008) conducted a desktop search of the following databases:

- Department of Environment and Conservation's (DEC) Priority and Threatened Fauna Database;
- Western Australian Museum (WAM) FaunaBase; and
- Department of the Environment, Water, Heritage and the Arts *Environment Protection and Biodiversity Conservation (EPBC) ACT 1999* online database (Rio Tinto, 2009; Biota Environmental Sciences Pty Ltd, 2008).

In addition to those species listed above, the following fauna species of conservation significance were identified through the above mentioned desktop assessments: Brush-tailed Mulgara (*Dasyercus blythi*),

Northern Quoll (*Dasyurus hallucatus*), Orange Leaf-nosed Bat (*Rhinonicteris aurantius*), Spectacled Hare-wallaby (*Lagorchestes conspicillatus leichardti*), Ghost Bat (*Macroderma gigas*), Ramphotyphlops ganeii, *Notoscincus butleri*, Night Parrot (*Pezoporus occidentalis*), Bush Stone-curlew (*Burhinus grallarius*), Oriental Plover (*Charadrius veredus*), Fork-tailed Swift (*Apus pacificus*), Rainbow Bee-eater (*Merops ornatus*), Great Egret (*Ardea alba*) and the Cattle Egret (*Ardea ibis*) (Rio Tinto, 2009; Biota Environmental Sciences Pty Ltd, 2008).

Rio Tinto (2009) and Biota Environmental Sciences Pty Ltd (2008) recorded three habitat types as occurring within the application area:

- **Stony Undulating Footslopes/Plains** - Eucalypt low woodland (or Mallee scrub) over tall open shrubland to open shrubland of mixed *Acacia* species over *Triodia wiseana* hummock grassland;
- **Rocky Crests and Slopes** - Eucalypt low woodland over mixed *Acacia* species tall shrubland over *Triodia wiseana* hummock grassland; and
- **Flat to Undulating Plains** - *Acacia aneura*, *A. pruinocarpa* low open forest over *Rhagodia eremaea* open shrubland (Rio Tinto, 2009).

Several minor non-perennial drainage tracts traverse the application area and provide narrow bands of *Eucalyptus xerothermica* low open forest over mixed *Acacia* tall open shrubland, within which some woody debris and thicker riparian vegetation is present and may provide significant fauna habitat (Rio Tinto, 2009). However, this habitat type and more substantial creeklines are located to the east and within various other areas of the greater Tom Price area (Rio Tinto, 2009). Therefore, it is unlikely that the proposed clearing will significantly impact on fauna habitat.

The habitat types found within the application area are well represented locally and within the Pilbara region generally. Therefore, the vegetation within the application area is not likely to represent significant habitat for the fauna species found within the locality of Tom Price.

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

Methodology Biota Environmental Sciences Pty Ltd (2008)
DEC (2009)
Rio Tinto (2009)

(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, no Declared Rare Flora (DRF) species occur within the application area (GIS Database).

A flora survey was conducted over the application area by staff from Biota Environmental Sciences Pty Ltd on 2-3 September 2008 and Pilbara Iron staff on 30-31 October 2008 (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009). These surveys involved the application area being extensively traversed on foot using a grid search technique, with botanists spaced 20-30 metres apart as they moved through the site (Rio Tinto, 2009).

No DRF or Priority Flora species were recorded during the surveys (Biota Environmental Sciences Pty Ltd, 2008; Rio Tinto, 2009).

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

Methodology Biota Environmental Sciences Pty Ltd (2008)
Rio Tinto (2009)
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

A search of available databases reveals that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database).

The nearest TEC occurs approximately 34 kilometres north-east of the application area (Themeda Grasslands). It is not expected that the proposed clearing will impact the conservation of this TEC.

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

Methodology GIS Database
- Threatened Ecological Communities

(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 IBRA Pilbara bioregion (GIS Database). Shepherd (2009) report that approximately 99.9% of the pre-European vegetation still exists in this bioregion.

The vegetation in the application area is recorded as Beard Vegetation Association 567: Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii* (GIS Database; Shepherd, 2009).

According to Shepherd (2009) approximately 100% of Beard Vegetation Association 567 remains within the Pilbara 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	17,785,000	~99.9%	Least Concern	~6.3%
Beard veg assoc. – State					
567	777,506	777,506	~100%	Least Concern	~22.3%
Beard veg assoc. – Bioregion					
567	776,823	776,823	~100%	Least Concern	~22.3%

* Shepherd (2009)

** 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)
Shepherd (2009)
GIS Database
- Pre-European Vegetation
- Interim Biogeographic Regionalisation for Australia

(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

According to available GIS Databases, there are no permanent watercourses within the application area, however, there are several minor, non-perennial watercourses within the application area (GIS Database).

Based on vegetation mapping conducted by Biota Environmental Sciences Pty Ltd (2008) there would appear to be riparian vegetation present within the application area (Biota Environmental Sciences Pty Ltd, 2008). Two of the eleven vegetation associations found within the application area are associated with drainage areas (Biota Environmental Sciences Pty Ltd, 2008).

- Minor Flowline - poorly defined channel (MF1); and
- Minor Flowline/drainage area with undefined channel (MF2)

The vegetation associated with the drainage channels is likely to be a fauna refuge and as such disturbance should be kept to a minimum.

The application area is located in a semi-desert-tropical region (CALM, 2001). This region has an average annual rainfall of approximately 402 millimetres falling mainly during the summer months, and an average annual evaporation rate of approximately 3,600 millimetres (Rio Tinto, 2009). Hence, the presence of surface water resulting from significant rain events is relatively short-lived. Therefore, the watercourses present are expected to be dry except following heavy rainfall which is usually associated with tropical cyclone events (CALM, 2001).

Based on the above, the proposed clearing is at variance to this Principle. However, as the minor drainage lines

located within the application area are only likely to flow following significant rainfall, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland provided natural surface water flow patterns are not disturbed.

Methodology Biota Environmental Sciences Pty Ltd (2008)
CALM (2001)
Rio Tinto (2009)
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 area has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004). The application area is composed of the following land system (GIS Database);

- Platform Land System

The Platform Land System is described as dissected slopes and raised plains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). This system is not susceptible to erosion or vegetation degradation (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'stony upper plains' and 'drainage floors' land units. The soils of these land units (red loamy earths and stony/sandy duplex soils) are not susceptible to erosion due to a surface mantle of pebbles and cobbles of ironstone and other rocks. The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota Environmental Sciences Pty Ltd, 2008).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit to retain the vegetative material and topsoil for use in later rehabilitation.

Methodology Biota Environmental Sciences Pty Ltd (2008)
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 application area is located approximately 12.5 kilometres west of Karijini National Park (GIS Database). At this distance it is not likely that the vegetation within the application area provides a buffer to a conservation area, or is important as an ecological linkage to a conservation area.

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

Methodology GIS Database
- CALM Managed Lands and Waters

(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**

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

The application area lies within a proclaimed surface water area under the *Rights in Water and Irrigation Act 1914* (RIWI Act) (DoW, 2009; GIS Database). Any taking or diversion of surface water in this proclaimed area for purposes other than domestic and/or stock watering is subject to licence by the Department of Water. Furthermore any interference with the bed or banks of a watercourse will require a permit from the Department of Water.

The application area is located within the Pilbara Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914* (DoW, 2009; GIS Database). Any groundwater abstraction for purposes other than domestic and/or stock watering within this proclaimed area is subject to licensing by the Department of Water. The issuing of a groundwater licence is not guaranteed but if issued will contain a number of conditions that are binding upon the landowners.

The groundwater salinity within the application area is approximately 500 - 1000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the size of the area to be cleared (27.3 hectares) compared to the size of the Hamersley Groundwater Province (10,166,832 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are no known groundwater dependent ecosystems within the application area (GIS Database).

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

Methodology DoW (2009)
GIS Database
- Public Drinking Water Source Area
- Groundwater Salinity, Statewide
- RIWI Act, Groundwater Areas
- RIWI Act, Surface water Areas
- Groundwater Provinces
- Potential Groundwater Dependent Ecosystems

(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 experiences a semi-desert, tropical climate with an average annual rainfall of 402 millimetres (CALM, 2001; Rio Tinto, 2009). Rainfall is usually experienced during summer months and can be either cyclonic or attributed to thunderstorm events (CALM, 2001). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas.

The application area is located within the Ashburton River catchment area (GIS Database). However, the moderate area to be cleared (27.3 hectares) in relation to the size of the Ashburton River catchment area (1,877,743 hectares) (GIS Database) is not likely to increase the potential for flooding within the application area (GIS Database).

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

Methodology CALM (2001)
Rio Tinto (2009)
GIS Database
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC97_089) over the area under application. 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 is one known Aboriginal site of significance within the application area (ID_11295) (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 amendment application was advertised on 7 March 2011. One public submission was received stating no objection to the original application.

Clearing permit CPS 3132/1 was granted by the Department of Mines and Petroleum on 25 June 2009, and is valid from 25 July 2009 to 31 July 2014. The clearing permit authorised the clearing of 27.3 hectares of native vegetation. An application for an amendment to clearing permit CPS 3132/1 was submitted by Hamersley Iron Pty Ltd on 17 February 2011. The proponent has requested that the boundary in which the clearing is to occur be increased from 39.9 hectares to 45.5 hectares. No increase in size is required to the area of native vegetation to be cleared. There were no additional environmental impacts as a result of this amendment.

Methodology DoW (2009)

- GIS Database
- Aboriginal Sites of Significance
- Native Title Claims
- RIWI Act, Groundwater Areas
- RIWI Act, Surface water Areas

4. References

- Biota Environmental Sciences Pty Ltd (2008) Tom Price Infrastructure Development Native Vegetation Clearing Permit Report. Unpublished report prepared for Rio Tinto, November 2008
- CALM (2001) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley subregion) Department of Conservation and Land Management, Western Australia
- DEC (2009) NatureMap - Department of environment and Conservation and Western Australian Museum. <http://naturemap.dec.wa.gov.au/default.aspx> (Accessed 12 June 2009)
- 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.
- DoW (2009) Water Quality Advice. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP), received (15 June). Department of Water, 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 (2009) Jundumunnah Village Waste Water Treatment Plant (JVWWTTP) Expansion, Tom Price (AR-08-03921) Native Vegetation Clearing Permit Report. January 2009. Rio Tinto, 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, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.