



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6307/1
Permit Holder:	API Management Pty Ltd
Duration of Permit:	10 October 2015 – 10 October 2022

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of geotechnical and hydrogeological investigations and access tracks.

2. Land on which clearing is to be done

Section 91 licence LIC00904/2010_A5415788 within:

PART LOT 264 ON PLAN 220363, MAITLAND

LOT 530 ON PLAN 221145, MAITLAND

UNALLOCATED CROWN LAND (PIN 705727, PIN 705734), MAITLAND

ROAD RESERVE (PIN 11733142, PIN 11733143, 11733147, PIN 11733152, PIN 11733154), MAITLAND

LOT 51 ON PLAN 174225, MAITLAND

CLOSED ROAD (PIN 705740), MAITLAND

LOT 666 ON PLAN 30491, MAITLAND

LOT 3002 ON PLAN 42721, MAITLAND

LOT 3000 ON PLAN 42721, MAITLAND

LOT 604 ON PLAN 66691, COOYA POOYA

LOT 601 ON PLAN 66690, COOYA POOYA

LOT 286 ON PLAN 242018, MAITLAND

LOT 32 ON PLAN 47815, MAITLAND

LOT 149 ON PLAN 184653, COOYA POOYA

LOT 126 ON PLAN 183297, COOYA POOYA

LOT 609 ON PLAN 66691, COOYA POOYA

LOT 302 ON PLAN 66692, MAITLAND

LOT 555 ON PLAN 74205, COOYA POOYA

LOT 602 ON PLAN 66690, COOYA POOYA

LOT 605 ON PLAN 66691, COOYA POOYA

LOT 530 ON PLAN 221145, COOYA POOYA

LOT 532 ON PLAN 221145, COOYA POOYA

ROAD RESERVE (PIN 11733148, PIN 11733149, PIN 11733150), COOYA POOYA

UNALLOCATED CROWN LAND (PIN 705693), COOYA POOYA
LOT 303 ON PLAN 66693, COOYA POOYA
CROWN RESERVE (18571), COOYA POOYA
LOT 259 ON PLAN 188815, COOYA POOYA
LOT 187 ON PLAN 216485, COOYA POOYA
LOT 260 ON PLAN 188815, COOYA POOYA

3. Area of Clearing

The Permit Holder shall not clear more than 50 hectares of native vegetation within the area cross hatched yellow on attached Plan 6307/1a.

4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 10 May 2017.

5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II –MANAGEMENT CONDITIONS

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared, the Permit holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

7. Flora and ecological community management

- (a) Prior to undertaking any clearing within the area cross hatched red on attached Plan 6307/1b, the Permit Holder shall engage a botanist to undertake a *targeted flora survey* of the area(s) to be cleared in accordance with *Guidance Statement No. 51* to identify possible occurrences of, *rare flora*, *priority flora* or *priority ecological communities*.
- (b) The Permit Holder shall ensure that no clearing occurs within 50 metres of *rare flora* or *priority flora*, or *priority ecological communities* identified in relation to condition 7(a) of this Permit, unless approved by the CEO in writing.

8. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) prior to 11 May 2017 *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;
 - (ii) ripping the ground on the contour to remove soil compaction; and
 - (iii) laying the vegetative material and topsoil retained under condition 8(a) on the cleared area(s).
- (c) within 18 months of laying the vegetative material and topsoil on the cleared area(s) in accordance with condition 8(b) of this Permit:

- (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated and rehabilitated*; and
- (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 8(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, revegetate the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) Where additional planting or direct seeding of native vegetation is undertaken in accordance with condition 8(c)(ii) of this Permit, the Permit Holder shall repeat condition 8(c)(i) and 8(c)(ii) within 18 months of undertaking the additional planting or direct seeding of native vegetation.
- (e) Where a determination by an environmental specialist that the composition, structure and density within areas revegetated and rehabilitated will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 8(c)(i) and (ii) of this Permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 8(c)(ii), the CEO may require the Permit Holder to undertake additional planting and direct seeding in accordance with the requirements under condition 8(c)(ii).

9. Weed control

When undertaking any clearing or other activity pursuant to this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (a) Clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) Ensure that no weed-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) Restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

PART III - RECORD KEEPING AND REPORTING

10. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to flora and ecological communities management pursuant to condition 7 of this Permit:
 - (i) the location of each *rare flora* and/or *priority flora* species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the boundaries of each *priority ecological community* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

- (iii) the name of each *rare flora*, *priority flora* and *priority ecological communities* identified; and
 - (iv) a copy of the *botanist's* flora survey report.
- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 8 of this Permit:
- (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the date the *revegetation* and *rehabilitation* activities were undertaken;
 - (v) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (vi) a copy of the *environmental specialist's* report.

11. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 10 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 10 July 2022, the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

Definitions

The following meanings are given to terms used in this Permit:

botanist: means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience in identification and surveys of flora native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fill means material used to increase the ground level, or fill a hollow;

Guidance Statement No. 51 means the Environmental Protection Authority Guidance Statement No 51, Guidance for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (2004);

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

priority ecological communities means those ecological communities described as priorities 1, 2, 3, 4, 5 in the *Department of Parks and Wildlife's Priority Ecological Communities list for Western Australia*;

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Parks and Wildlife's Threatened and Priority Flora List for Western Australia* (as amended);

rare flora means those plant taxa gazetted as rare flora pursuant to section 23F(2) of the *Wildlife Conservation Act 1950* (as amended).

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

targeted flora survey: means a field-based investigation, including a review of established literature, of the biodiversity of flora and vegetation of the Permit Area, focusing on habitat suitable for flora species that are being targeted and carried out during the optimal time to identify those species. Where target flora are identified in the Permit Area, the survey should also include sufficient surrounding areas to place the Permit Area into local context;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

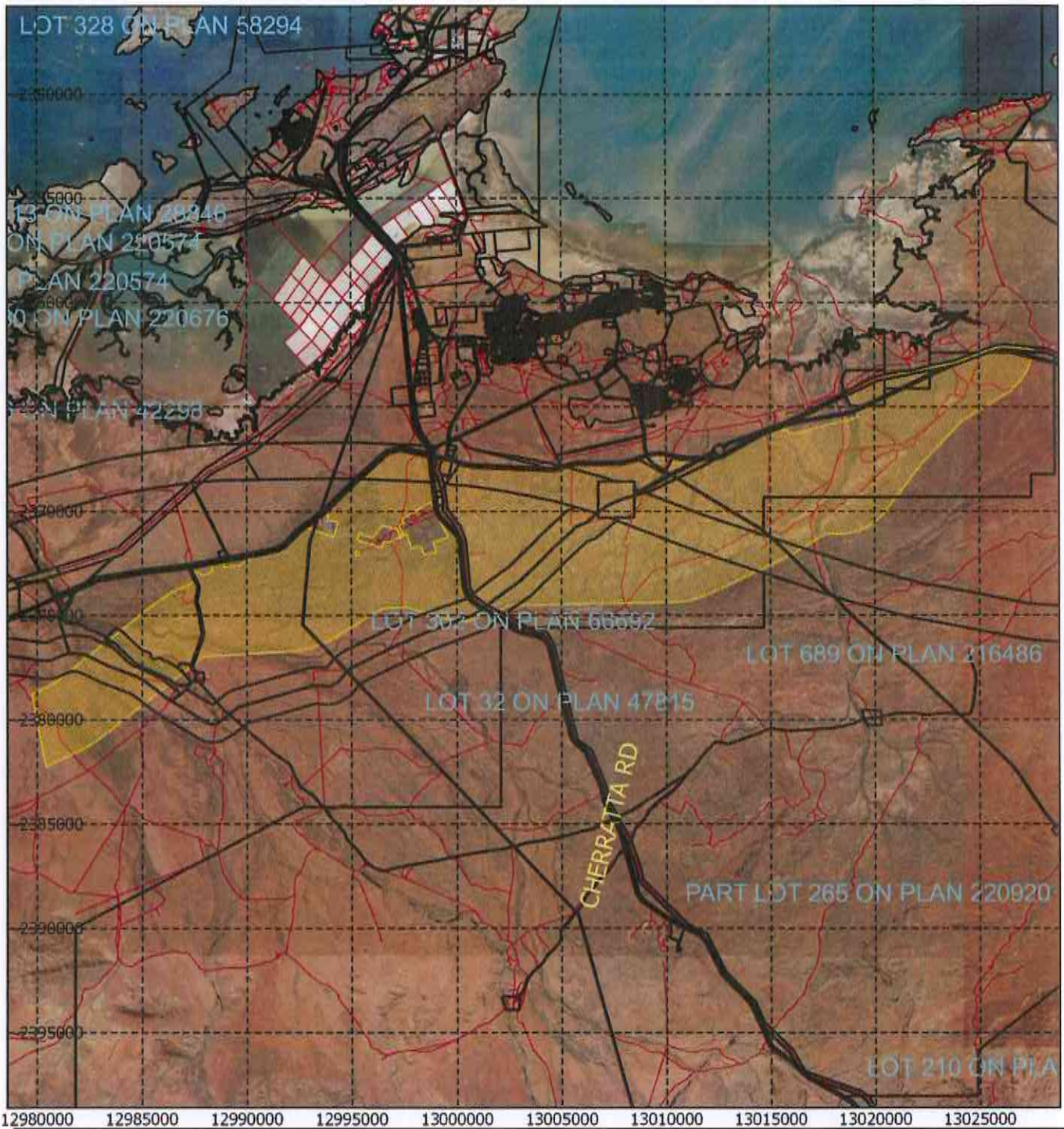


M Warnock
SENIOR MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

10 September 2015

Plan 6307/1a



Legend

- Areas approved to clear
- Iga
- Roads
- Cadastre
- Virtual Mosaic



1:273,065

MGA 94
Geocentric Datum of Australia 1994

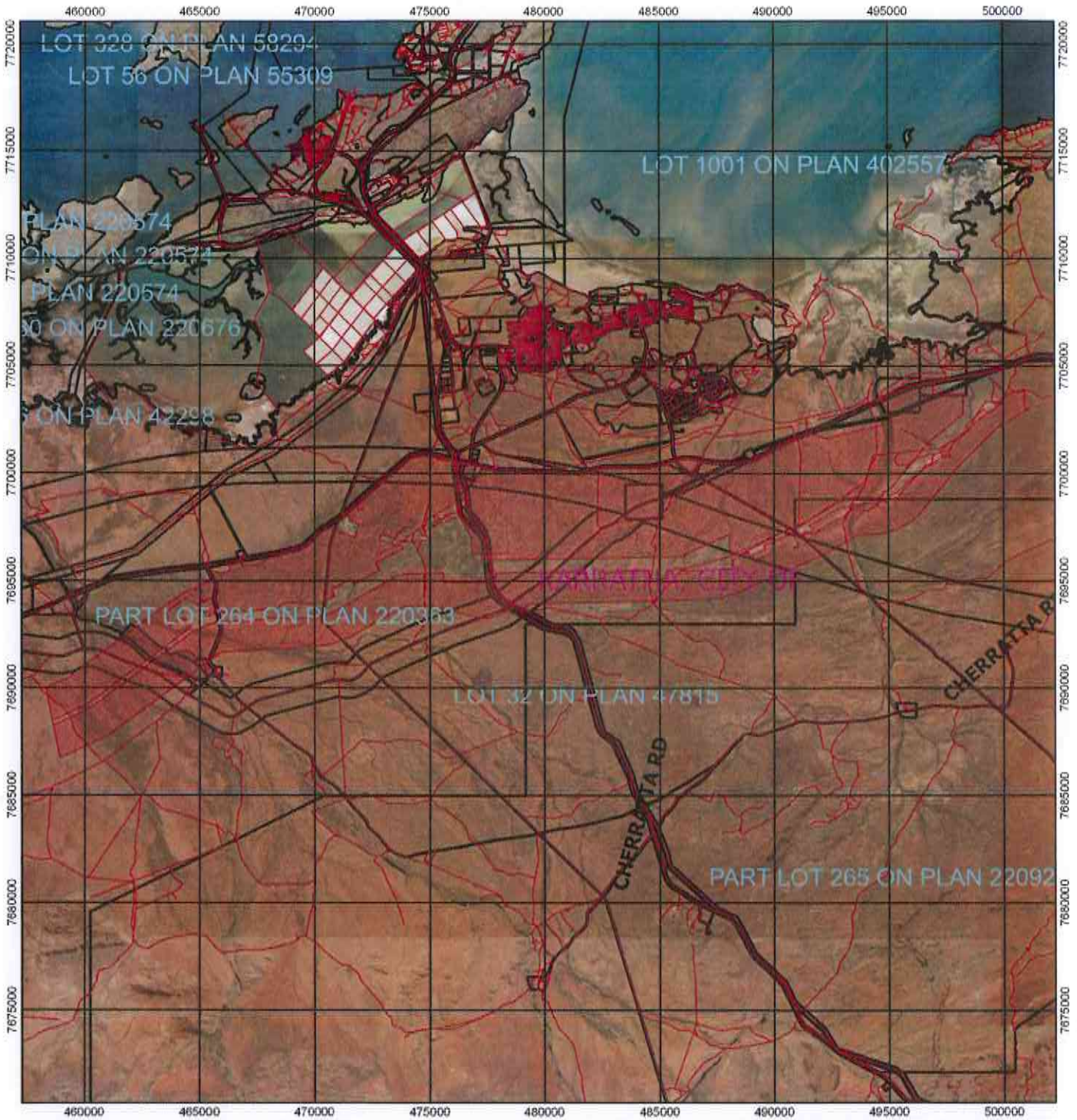
M Warnock Date 10/9/15
M Warnock

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6307/1b



Legend

-  Roads
-  LGA
-  Cadastre
- Virtual Mosaic (LGATE-V001)
- 
-  Clearing Instruments Conditions



1:200,000

MGA 94
Geocentric Datum of Australia 1994

M Wamock Date *10/9/15*
M Wamock

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 6307/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: API Management Pty Ltd

1.3. Property details

Property: PART LOT 264 ON PLAN 220363, MAITLAND
LOT 530 ON PLAN 221145, MAITLAND
UNALLOCATED CROWN LAND, MAITLAND
ROAD RESERVE, MAITLAND
LOT 51 ON PLAN 174225, MAITLAND
CLOSED ROAD, MAITLAND
LOT 666 ON PLAN 30491, MAITLAND
LOT 3002 ON PLAN 42721, MAITLAND
LOT 3000 ON PLAN 42721, MAITLAND
LOT 604 ON PLAN 66691, COOYA POOYA
LOT 601 ON PLAN 66690, COOYA POOYA
LOT 286 ON PLAN 242018, MAITLAND
LOT 32 ON PLAN 47815, MAITLAND
LOT 149 ON PLAN 184653, COOYA POOYA
LOT 126 ON PLAN 183297, COOYA POOYA
LOT 609 ON PLAN 66691, COOYA POOYA
LOT 302 ON PLAN 66692, MAITLAND
LOT 555 ON PLAN 74205, COOYA POOYA
LOT 602 ON PLAN 66690, COOYA POOYA
LOT 605 ON PLAN 66691, COOYA POOYA
LOT 530 ON PLAN 221145, COOYA POOYA
LOT 532 ON PLAN 221145, COOYA POOYA
ROAD RESERVE, COOYA POOYA
UNALLOCATED CROWN LAND, COOYA POOYA
LOT 303 ON PLAN 66693, COOYA POOYA
CROWN RESERVE 18571, COOYA POOYA
LOT 259 ON PLAN 188815, COOYA POOYA
LOT 187 ON PLAN 216485, COOYA POOYA
LOT 260 ON PLAN 188815, COOYA POOYA

Local Government Authority: KARRATHA, CITY OF
DER Region: North West
LCDC: ROEBOURNE - PORT HEDLAND
Localities: MOUNT ANKETELL and MAITLAND and COOYA POOYA

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
50		Mechanical Removal	Geotechnical investigations

1.5. Decision on application

Decision on Permit: Granted
Application:
Decision Date: 10 September 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The vegetation under application is mapped as Beard vegetation association's (Shepherd et al,	The application is to clear 50 hectares of native vegetation located within Section 91 licence LIC00904/2010_A541	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation under application is in a completely degraded to excellent (Keighery, 1994) condition (AECOM, 2010), with majority being in a good to very good (Keighery, 1994) condition (AECOM, 2010).

2001):	5788, for the purposes of geotechnical, hydrogeological investigations and access tracks.	To	A Level 2 Flora and Vegetation Survey covering a portion of the application area identified 19 vegetation communities within five land system units (AECOM, 2010).
• Beard Vegetation Association 157 is described as Hummock grasslands, grass steppe; hard spinifex, <i>Triodia wiseana</i>		Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	
• Beard Vegetation Association 641 is described as Medium woodland; coolabah & river gum			
• Beard Vegetation Association 127 is described as Bare areas; mud flats			
• Beard Vegetation Association 175 is described as Short bunch grassland - savanna/grass plain (Pilbara)			
• Beard Vegetation Association 589 is described as Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex			

3. Assessment of application against clearing principles

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

Comments

Proposed clearing may be at variance to this Principle

The applicant has applied to clear 50 hectares of native vegetation within an application area of approximately 22,503 hectares located within the land parcels associated with Section 91 licence LIC00904/2010_A5415788. API Management Pty Ltd (2014) proposes to undertake the clearing within the application area for feasibility investigations (geotechnical and hydrogeological) and access tracks. These investigations will occur within the application area along the project transport corridor associated with the development of the West Pilbara Iron Ore Project to validate the rail design and investigate potential groundwater sources to support construction (API Management Pty Ltd, 2014).

A Level 2 Flora and Vegetation Survey was undertaken by AECOM in 2010 along the transport corridor within the application area. It should be noted that the survey area comprises of less than 50 per cent of the application area spanning a length of 48 kilometres and a width of two to eight kilometres either side of the proposed transport corridor (railway).

The vegetation that was surveyed within the application area, ranged from a completely degraded to excellent (Keighery, 1994) condition, with the majority being in good to very good (Keighery, 1994) condition with minimal clearance or disturbance (AECOM, 2010).

A collective total of 325 flora taxa from 127 genera and 46 families within 19 vegetation communities were recorded within the survey areas. A total of nine weed species were recorded within the survey areas, indicating there is limited weed invasion (AECOM, 2010).

Two priority flora taxa were recorded during the survey undertaken by AECOM (2010), namely a Priority 2 and Priority 3 species. Priority 3 species are generally known from collections from several different localities not under imminent threat (Parks and Wildlife, 2014). Priority 2 listed taxa are generally only known from less than five locations and these taxa may potentially be rare or threatened, but there is currently insufficient information to list these taxa as declared rare flora, protected under the *Wildlife Conservation Act 1950* (Parks and Wildlife, 2014). In addition to the conservation significant flora recorded during the survey, three Priority 1 listed flora taxa that are commonly associated with the same soil and vegetation types as the application area have been

recorded 13, 16 and 12 kilometres north west of the application area.

Two Priority Ecological Communities (PEC) are mapped within the area under application. These PECs are known as the "Roebourne Plains Coastal grasslands with gilgai microrelief on deep cracking clays" (Roebourne Plains gilgai grasslands) (Priority 1) and the "Horseflat Land System of the Roebourne Plains" (Priority 3).

The Roebourne Plains gilgai grasslands community is confined to a small portion of the Horseflat Land System that consists of heavy cracking clay soil, and supports mostly annual tussock grasses and ephemeral herbs (Parks and Wildlife, 2015a). Eight occurrences of this PEC, that are considered to be in a very good to excellent condition when surveyed in 2008, fall within the application area (six entirely and a portion of another two) (Parks and Wildlife, 2015a). Approximately 48 per cent of the total mapped area of the community lies within the area under application.

This community is dependent on inundation with fresh water from sporadic rainfall events and any disruption to the natural hydrological processes is likely to result in changes to the floristics and structure of the community (Parks and Wildlife, 2015a). Furthermore, the removal and/or disturbance of the clay substrate from the proposed clearing is likely to lead to changes in community processes and community viability (Parks and Wildlife, 2015a). Therefore, the clearing as proposed may have a significant impact on the conservation status of this community (Parks and Wildlife, 2015a).

The Horseflat Land System of the Roebourne Plains Priority 3 ecological community is found mostly on the alluvial non-gilgaied, red clay loams component of the Horseflat Land System and is dominated by perennial tussock grasses (Parks and Wildlife, 2015a). This community is more extensive than the Roebourne Plains gilgai grasslands community, however has been subject to many threats including clearing for infrastructure and grazing purposes which has resulted in a depletion of grasslands, fragmentation and soil erosion (Parks and Wildlife, 2015a). A portion of two occurrences of this PEC fall within the application area, which constitutes a total of four per cent of the total known area for this community (Parks and Wildlife, 2015a). Given this, the clearing as proposed is unlikely to have a significant impact on the conservation status of this community.

No rare flora has been recorded within a 40 kilometre radius of the application area.

The proposed clearing will increase the risk of weeds spreading into adjacent vegetated areas. Weed management practices will assist in mitigating this risk.

Given that the application area includes known occurrences of priority flora and a Priority 1 PEC, it may contain a high level of biodiversity, and the proposed clearing may be at variance to this Principle.

In response to the above assessment, the applicant has advised that all field investigations are planned to take place within the study corridor, which has been extensively surveyed to a Level 2 standard. The applicant has made a commitment that should any works be required outside of the study corridor, the areas proposed for clearing will be inspected by a qualified botanist for priority flora and the Priority 1 PEC. A flora management condition has been placed on the permit to reflect this commitment.

Methodology

References:

- AECOM (2010)
- API Management Pty Ltd (2014)
- Keighery (1994)
- Parks and Wildlife (2014)
- Parks and Wildlife (2015)
- Parks and Wildlife (2015a)

GIS Databases:

- SAC Bio Datasets (Accessed September 2015)
- Parks and Wildlife Tenure

(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

Proposed clearing is not likely to be at variance to this Principle

Numerous fauna species of conservation significance have been recorded within a 40 kilometre radius of the application area (Parks and Wildlife, 2007-). A Level 2 Fauna Survey undertaken over a portion of the application area recorded over 300 fauna species (Biota Environmental Sciences, 2009). Of these species, eight species of conservation significance were identified including the Peregrine Falcon (*Falco peregrinus*), Australian Bustard (*Ardeotis australis*), Rainbow Bee-eater (*Merops ornatus*), Lined Soil-Crevis Skink (*Notoscincus butleri*), Northern Quoll (*Dasyurus hallucatus*), Flock Bronzewing (*Phaps histrionica*), Western Pebble-Mound Mouse (*Pseudomys chapmani*) and Fork-tailed Swift (*Apus pacificus*).

Suitable fauna habitat is likely to occur within the application area for ground dwelling fauna such as the Lined Soil-Crevis Skink (*Notoscincus butleri*) which was recorded 1.5 kilometres from the proposed centreline (API Management Pty Ltd, 2014), and the Northern Quoll (*Dasyurus hallucatus*) which is likely to occur in rocky habitats adjacent to the major regional drainage systems within the application area (Biota Environmental Sciences, 2009).

However, given the temporary nature of the proposed works and the extensively vegetated surrounding landscape, the proposed clearing is unlikely to impact significant habitat for fauna.

The proposed clearing is not likely to be at variance to this principle.

- Methodology** References:
- API Management Pty Ltd (2014)
 - Biota Environmental Sciences (2009)
 - Parks and Wildlife (2007-)
- GIS Databases:
- NLWRA, Current Extent of Native Vegetation

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

- Comments** **Proposed clearing is not likely to be at variance to this Principle**
- There are no known records of rare flora within a 40 kilometre radius of the application area. Flora and vegetation surveys of a portion of the application area undertaken by AECOM in 2010 did not record any rare flora species.
- Therefore, the proposed clearing is not likely to be at variance to this principle.

- Methodology** References:
- AECOM (2010)
- GIS Databases:
- SAC Bio Datasets (Accessed September 2015)

(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** **Proposed clearing is not likely to be at variance to this Principle**
- There are no mapped Threatened Ecological Communities (TEC) within the local area (40 kilometre radius). The "Roebourne Plains Coastal grasslands with gilgai microrelief on deep cracking clays" (Roebourne Plains gilgai grasslands) ecological community was assessed in 2008 as meeting the rank 'Endangered' by the WA Threatened Ecological Communities Scientific Committee based on the community's limited distribution and vulnerability to threatening processes (Parks and Wildlife 2015a). However, the community is currently listed as a Priority 1 ecological community, and further survey work needs to be undertaken before it may be listed as a TEC.
- Given the above, the proposed clearing is not likely to be at variance to this principle.

- Methodology** References:
- Parks and Wildlife (2015a)
- GIS Databases:
- SAC Bio Datasets (Accessed September 2015)

(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** **Proposed clearing is not at variance to this Principle**
- The vegetation under application has been identified as Beard vegetation associations 157, 589, 175, 127 and 641 of which there is 99, 99, 99, 90 and 100 per cent of their pre-European extent remaining respectively within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion (Government of Western Australia, 2014).
- The area under application is located within the Shire of Roebourne, within which there is approximately 98 per cent pre-European vegetation remaining (Government of Western Australia, 2014).
- The local area (40 kilometre radius) retains approximately 99 per cent native vegetation.
- Given the application area and surrounds are highly vegetated, the proposed clearing is not at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Pilbara	17,808,657	17,733,584	99	8
Shire*				
Shire of Roebourne	1,529,968	1,500,853	98	1
Beard Vegetation Association in Bioregion*				
157	199,832	198,409	99	6
589	728,768	724,696	99	2
175	507,860	507,467	99	5
127	177,750	159,595	90	0.1
641	18,328	18,328	100	6

Methodology References
- Government of Western Australia (2014)

GIS Databases:
- NLWRA, Current Extent of Native Vegetation
- Pre-European Vegetation

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

Comments **Proposed clearing is at variance to this Principle**
A major non-perennial watercourse known as the 'Maitland River' crosses three separate areas of the western portion of the application area. A significant stream known as the 'Corringer Creek' flows into the Maitland River and also crosses the western portion of the application area. The Nichol River crosses the eastern portion of the application area. Several minor non-perennial watercourses are mapped within the application area. Given this, it is likely that the proposed clearing will impact on vegetation growing in association with watercourses.

The proponent has advised that during the investigative process, some access tracks will cross watercourses. It is advised that major watercourses will be crossed using the public road network and therefore the vegetation associated with major watercourses would not be impacted (API Management Pty Ltd, 2014).

Giving consideration to the relatively small amount of vegetation to be removed within the application area, it is unlikely that the proposed clearing will significantly impact on watercourses.

The proposed clearing is at variance to this principle.

Methodology References:
- API Management Pty Ltd (2014)

GIS Databases:
- Hydrography, linear

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application area is mapped within soil types MM17 (80 per cent) and Fa19 (20 per cent). MM17 soils are described as alluvial plains with occasional stony residuals of basic and ultrabasic rocks. Chief soils are deep cracking clays. Fa19 soils are described as steep stony hills and ranges on metamorphosed basic and ultrabasic rocks, with some iron ore formations. There may also be small areas of granite. Limited areas of steep dissected pediments and valley plains are included. The soils are generally shallow and stony and there are extensive areas without soil cover. Chief soils are shallow stony earthy loams (Northcote et al, 1960 - 1968).

The above mentioned soil types are not susceptible to wind erosion, however clearing within cracking clays may increase the risk of water erosion. Considering the relatively small amount of clearing proposed within an extensive application area, it is unlikely the proposed clearing will cause appreciable land degradation.

The proposed clearing is not likely to be at variance to this principle.

Methodology References:
- Northcote et al (1960-68)

(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 **Proposed clearing is not likely to be at variance to this Principle**
Numerous conservation areas are located within the local area (40 kilometre radius), with the closest, known as the "Murujuga National Park", mapped 13 kilometres north of the application area.

Given the distance of this conservation area to the area under application, and the extensively vegetated landscape surrounding the site, the proposed clearing is not likely to impact on the environmental values of this conservation area.

The proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Parks and Wildlife, 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 **Proposed clearing is not likely to be at variance to this Principle**
Several watercourses ranging from regional river systems such as the "Maitland River" to small ephemeral drainage lines occur within the application area (API Management Pty Ltd, 2014). The proposed clearing may result in short term sedimentation of surface water of these watercourses during and following seasonal rains.

Given the proposed clearing of 50 hectares occurs over a large footprint of approximately 22,503 hectares, impacts to surface water and groundwater quality are not expected to be significant.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
- API Management Pty Ltd (2014)

GIS Databases:
- Hydrography, linear

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
Numerous watercourses occur within the application area. However, given the small amount of clearing within a large footprint area, the proposed clearing is not likely to cause or exacerbate flooding.

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

Methodology GIS Databases:
- Hydrography, linear

Planning instruments and other relevant matters.

Comments The applicant has applied to clear 50 hectares of native vegetation for the purpose of undertaking feasibility geotechnical and hydrological investigations along a proposed transport corridor to validate the design of a rail line and investigate potential groundwater sources to support construction (API Management Pty Ltd, 2014). The proposed clearing is required for:

- Hydrological test holes (50 metres x 50 metres bore hole drill pads);
- Geotechnical test holes (20 metres x 20 metres bore hole drill pads); and
- Access tracks (not exceeding 6 metres, with an average of 4 metres in width) for vehicles and machinery where access cannot be obtained via existing roads or tracks.

The application area falls within the Pilbara proclaimed surface water and groundwater area under the Rights in Water and Irrigation Act 1914. The applicant has been issued a licence to 'construct or alter wells (CAW181421) and a permit to 'interfere with bed and banks' of a watercourse (PMB181247) from the Department of Water.

The City of Karratha (2014) has been advised of the application and has provided comments including recommendations relating to environmental management following post-clearing.

The application area falls within a Native Title Claimant area. The claimants, the Ngarluma people, and their representing body, the Yamatji Marlpa Aboriginal Corporation, have been notified of this application. To date no response has been received.

Several Aboriginal Sites of Significance are mapped within the application area. 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 without authorisation.

There have been no submissions received from the public for the proposed clearing.

Methodology

References:

- API Management Pty Ltd (2014)
- City of Karratha (2014)

4. References

- AECOM (2010) Proposed Anketell Point Transport Corridor, Associated Borrow Pits and Communication Towers. Level 2 Flora and Vegetation Assessment. Perth, Western Australia. (DER Ref:A819865).
- API Management Pty Ltd (2014) West Pilbara Iron Ore Project Stage 1 Native Vegetation Clearing Permit Application Supporting Report. Feasibility Investigations: Transport Corridor (Section D). Como, Western Australia. (DER Ref: A912810).
- Biota Environmental Sciences (2009) West Pilbara Iron Ore Project Rail Corridor Fauna and Fauna Assemblages Survey. Leederville, Western Australia (DER Ref: A912832).
- City of Karratha (2014) Advice for Clearing Permit CPS 6307/1. Western Australia. (DER Ref: A848058).
- Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. WA Department of Parks and Wildlife, 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.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Parks and Wildlife (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed 08/09/2015
- Parks and Wildlife (2014) Conservation Codes for Western Australia Flora and Fauna. Department of Parks and Wildlife. Western Australia.
- Parks and Wildlife (2015) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Parks and Wildlife (2015a) Species and Communities (Priority Ecological Communities) Advice for Clearing Permit CPS 6307/1. Department of Parks and Wildlife. Western Australia. (DER Ref: A919440).
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.