



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6013/1
Permit Holder:	DDG Fortescue River Pty Ltd
Duration of Permit:	12 July 2014 – 12 July 2024

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 constructing, installing and operating a natural gas pipeline and access track.

2. Land on which clearing is to be done

Lot 90 on Deposited Plan 215601 (Reserve 41435), Mardie
Lot 91 on Deposited Plan 215601 (Reserve 41436), Mardie
Lot 174 on Deposited Plan 190732 (Reserve 44742), Mardie
Lot 154 on Deposited Plan 220164, Mardie
Lot 257 on Deposited Plan 30489, Mardie
Lot 82 on Deposited Plan 220191, Chichester
Lot 83 on Deposited Plan 238012, Chichester
Lot 52 on Deposited Plan 54397, Fortescue
Lot 53 on Deposited Plan 56850, Fortescue
Lot 61 on Deposited Plan 240249, Fortescue
Lot 206 on Deposited Plan 220090, Fortescue
Lot 208 on Deposited Plan 220090, Fortescue
Lot 245 on Deposited Plan 220090, Fortescue
Lot 309 on Deposited Plan 63519, Fortescue
Lot 313 on Deposited Plan 63520, Fortescue
Lot 54 on Deposited Plan 241547, Pannawonica
Lot 148 on Deposited Plan 93149 (Reserve 38991), Hamersley Range
Lot 128 on Deposited Plan 240249, Fortescue
Lot 40 on Deposited Plan 242287, Hamersley Range
Lot 9 on Deposited Plan 47815, Chichester
North West Coastal Highway road reserve, Mardie (PIN11733356)
Unnamed road reserve, Chichester (PIN11732084)
Unallocated Crown land, Mount Sheila (PIN 1016569)
Unallocated Crown land, Hamersley Range (PIN 1016554)
Unallocated Crown land, Hamersley Range (PIN 1016550)

3. Area of Clearing

The Permit Holder must not clear more than 881 hectares of native vegetation within the areas shaded yellow on attached Plan 6013/1 (a), Plan 6013/1 (b), Plan 6013/1 (c), Plan 6013/1 (d), Plan 6013/1 (e), Plan 6013/1 (f), Plan 6013/1 (g), Plan 6013/1 (h) and Plan 6013/1 (i).

4. 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.

5. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 12 July 2019.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, 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. Weed control

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

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared;
- (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared;
- (iv) only move soils in dry conditions; and
- (v) where *weed*-affected soil, *mulch*, *fill* or other material is to be removed from the area to be cleared, ensure it is transferred to areas of comparable soil disease status.

(b) At least once in each 6 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

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) At an optimal time within 12 months following clearing authorised under this Permit, *revegetate* and *rehabilitate* areas no longer required for the purpose for which they were cleared under this Permit, by:

- (i) ripping the ground on the contour to remove soil compaction; and
- (ii) laying the vegetative material and topsoil retained under condition 8(a) on the cleared area(s).

(c) Within 24 months of laying the vegetative material and topsoil on the cleared area 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 24 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. Construction Environment Plan

- (a) The Permit Holder must prepare a Construction Environment Plan to be approved by the CEO prior to commencing works; and
- (b) Prior to clearing the Permit Holder must implement and adhere to the approved Construction Environment Plan.

PART III - RECORD KEEPING AND REPORTING

10. Records must 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 species composition, structure and density of the cleared area;
 - (ii) 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;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) 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 species composition, structure and density of *revegetation* and *rehabilitation*; and
 - (v) a copy of the environmental specialist's report.

11. Reporting

- (a) The Permit Holder must provide to the CEO on or before 31 December 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 year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 31 December of each year.
- (c) Prior to 12 March 2024, 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 with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres 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;

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 *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

weeds 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.

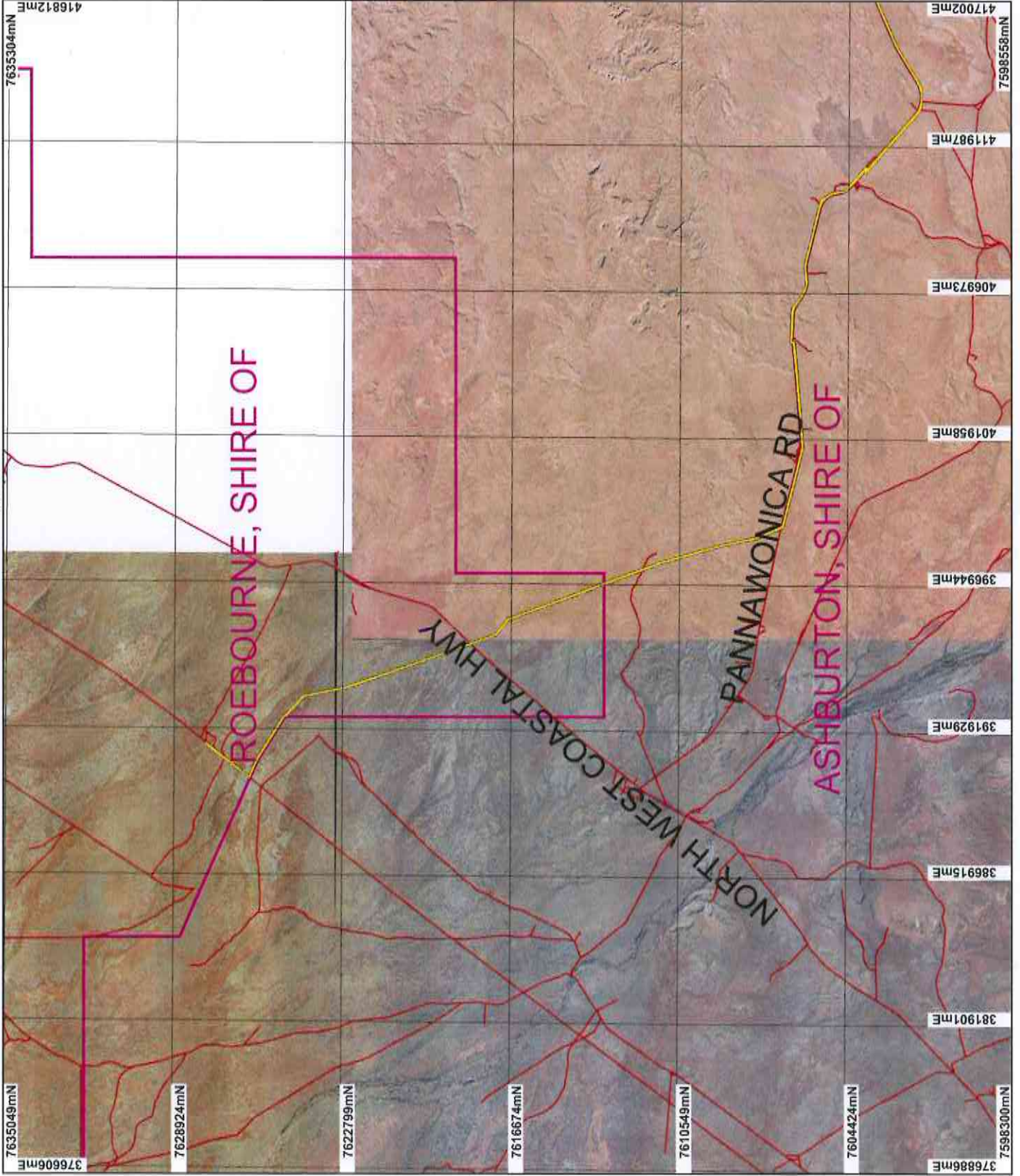


M Warnock
SENIOR MANAGER
CLEARING REGULATION

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

12 June 2014

Plan 6013/1 (a)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Meirle 1.4m Orthomosaic - Landgate 2001
- Yarrakoola 1.4m Orthomosaic - Landgate 2001
- Pannawonica 1.4m Orthomosaic - Landgate 2000
- Elvina 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billroth 1.4m Orthomosaic - Landgate 2000
- Micrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
This data has not been quality assured.
Please contact map author for details.



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Scale 1:1855000

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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M. Warwick Date 12/6/14

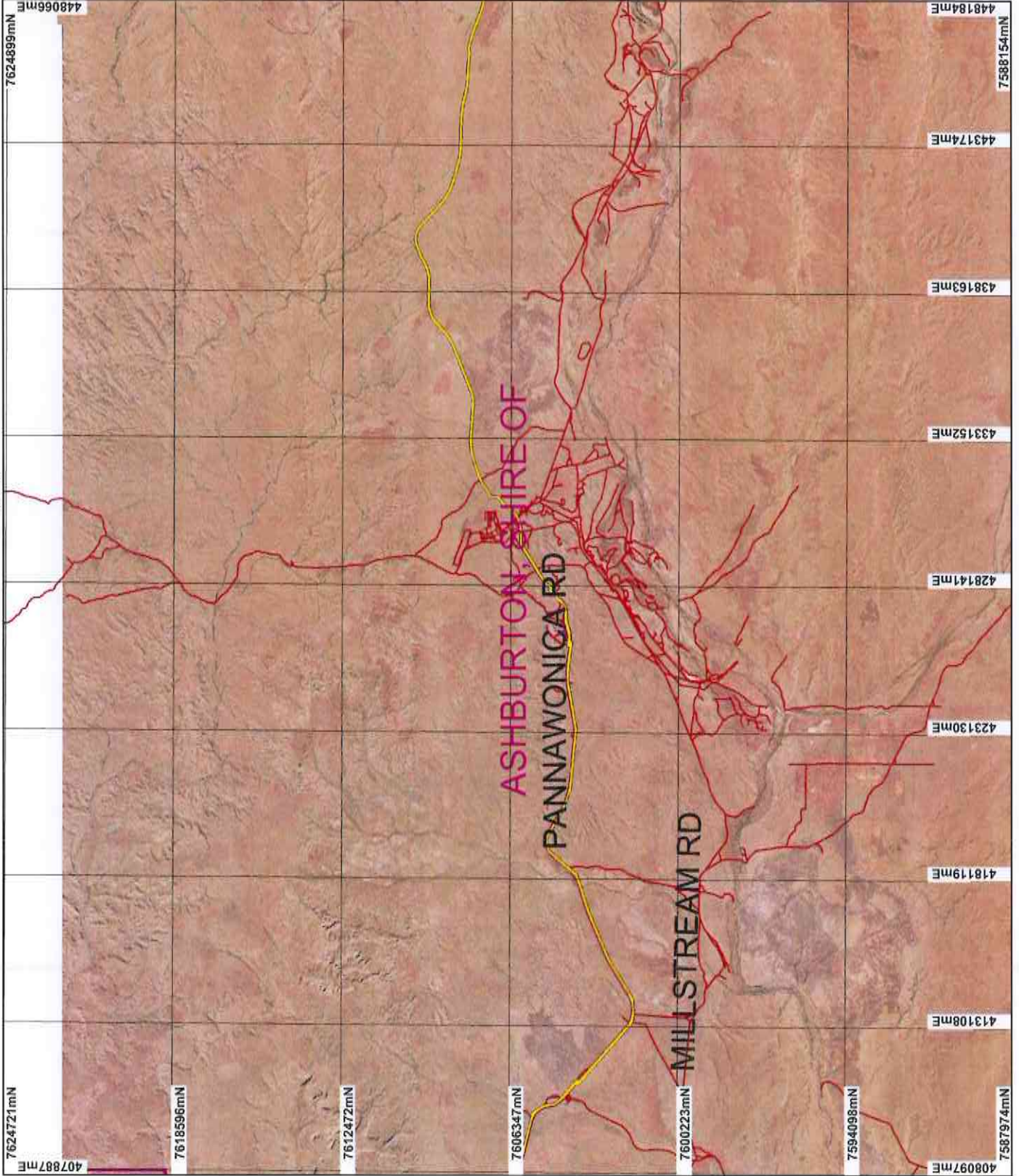
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Plan 6013/1 (b)



LEGEND

- Local Government Authorities
- / Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
 - Manville 1.4m Orthomosaic - Landgate 2001
 - Yarralooka 1.4m Orthomosaic - Landgate 2001
 - Pannawonica 1.4m Orthomosaic - Landgate 2000
 - Elvira 1.4m Orthomosaic - Landgate 2000
 - Millstream 1.4m Orthomosaic - Landgate 2000
 - Mount Billigroh 1.4m Orthomosaic - Landgate 2000
 - McInnes 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
This data has not been quality assured.
Please contact map author for details.



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Geocentric Datum Australia 1994

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M. Wilmock Date 12.6.14

M. Wilmock

Officer with delegate authority under Section 20 of
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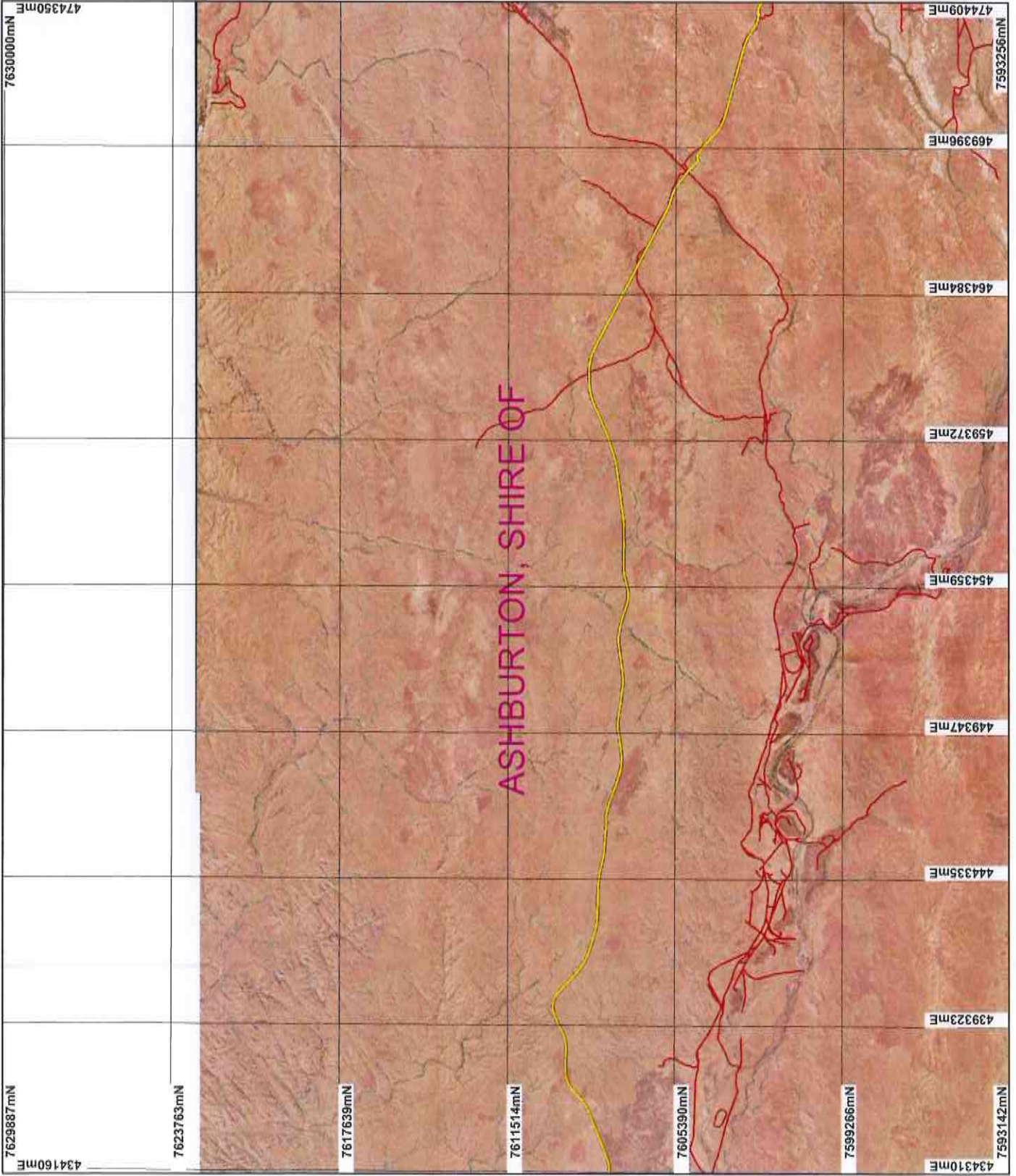
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Plan 6013/1 (c)



LEGEND

- Local Government Authorities
- / Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Manjilie 1.4m Orthomosaic - Landgate 2001
- Yarraloola 1.4m Orthomosaic - Landgate 2001
- Pannawonica 1.4m Orthomosaic - Landgate 2000
- Elvira 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billingsh 1.4m Orthomosaic - Landgate 2000
- Micrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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Please contact map author for details.



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M. Wislock Date *12/6/14*

M. Wislock

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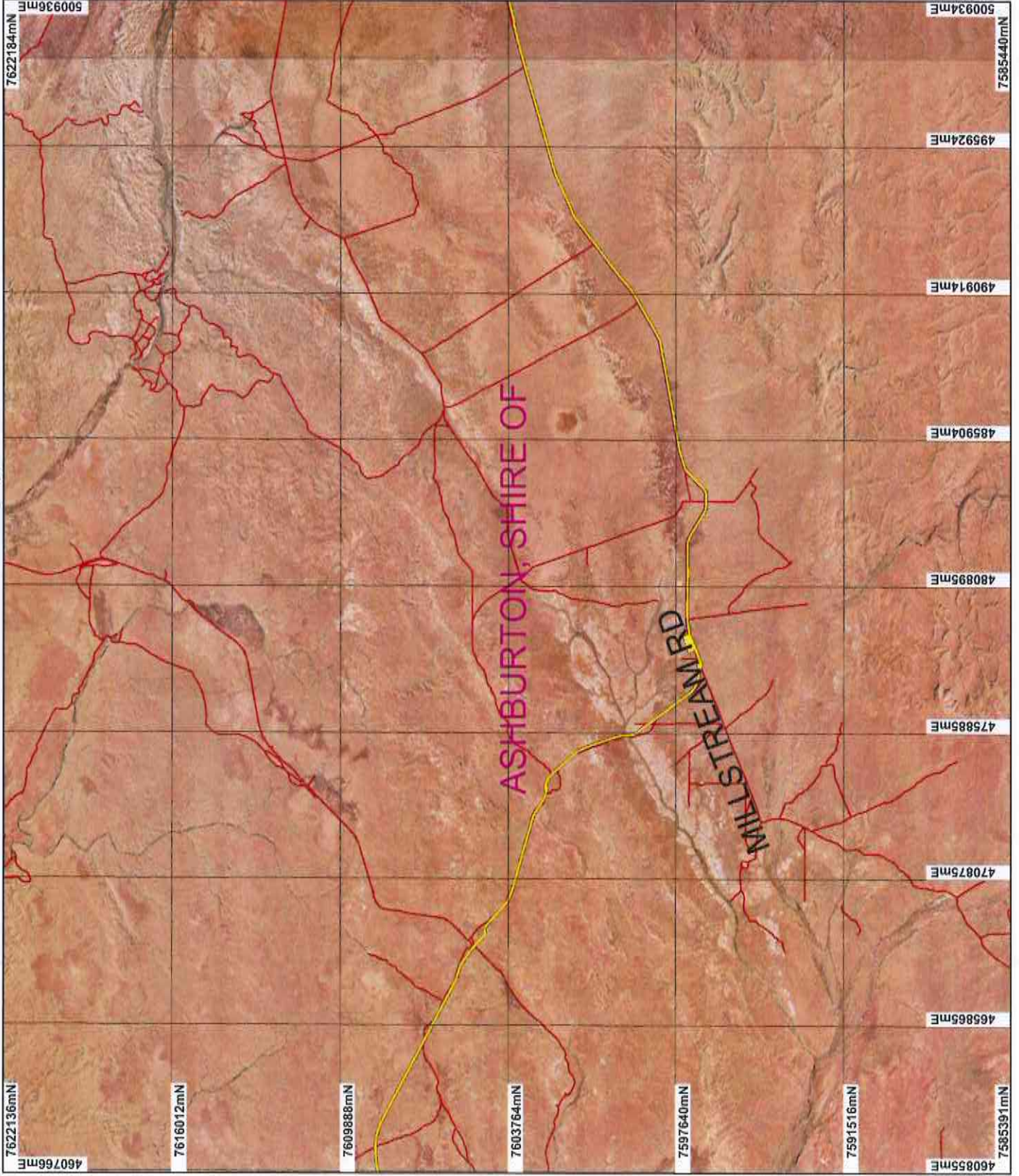
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Plan 6013/1 (d)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Mirinda 1.4m Orthomosaic - Landgate 2001
- Yarraloola 1.4m Orthomosaic - Landgate 2001
- Pannamoorina 1.4m Orthomosaic - Landgate 2000
- Elvira 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Bellamy 1.4m Orthomosaic - Landgate 2000
- Micrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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Please contact map author for details.



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M. Warlock Date 19/6/14

M. Warlock

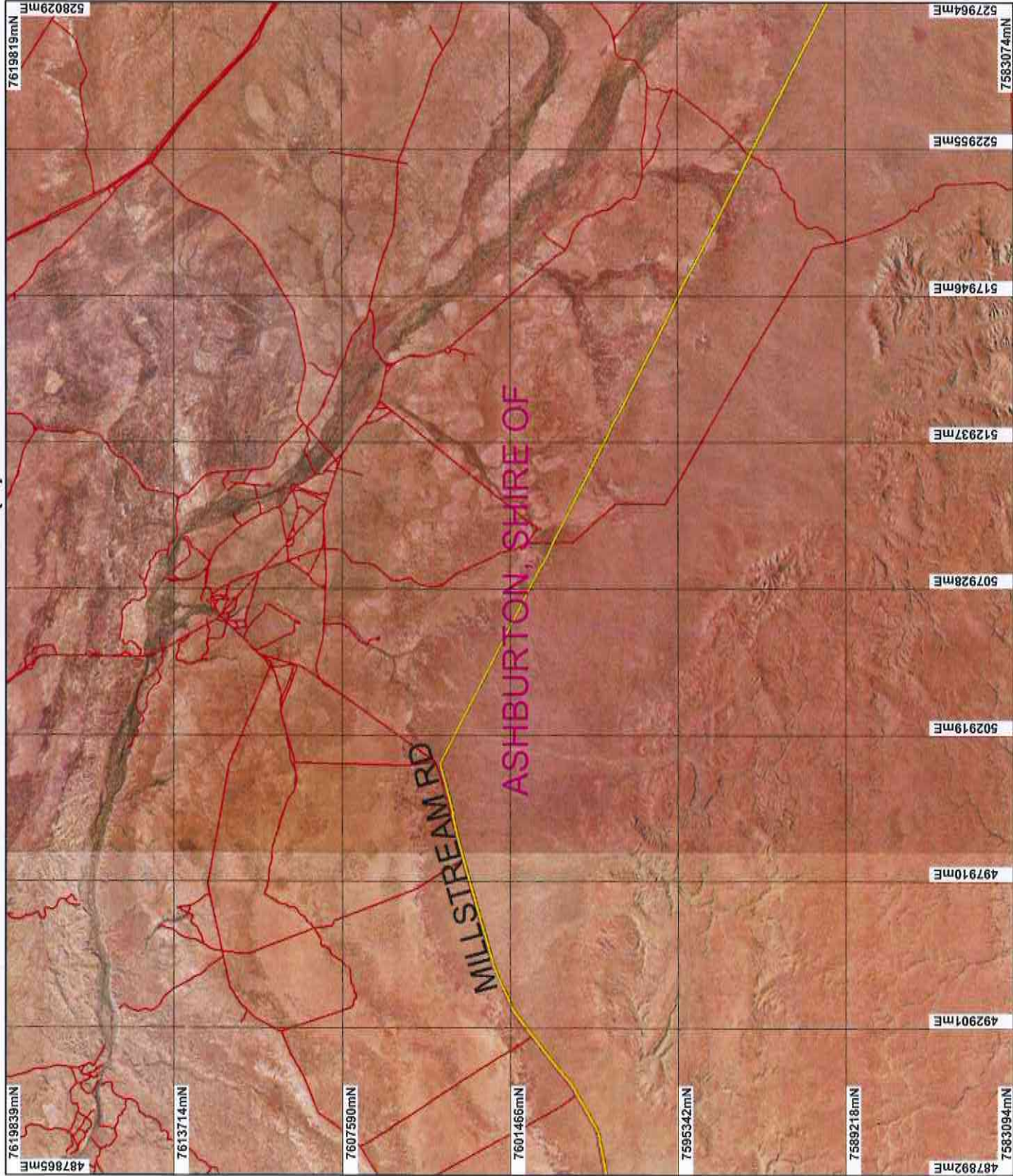
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Plan 6013/1 (e)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Mandlie 1.4m Orthomosaic - Landgate 2001
- Yarrakoola 1.4m Orthomosaic - Landgate 2001
- Pearmanupinga 1.4m Orthomosaic - Landgate 2000
- Elvine 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billroth 1.4m Orthomosaic - Landgate 2000
- Mirrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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Please contact map author for details.



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Scale 1:185405
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Geocentric Datum Australia 1994

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M. Ward Date 12/6/14

M. Ward

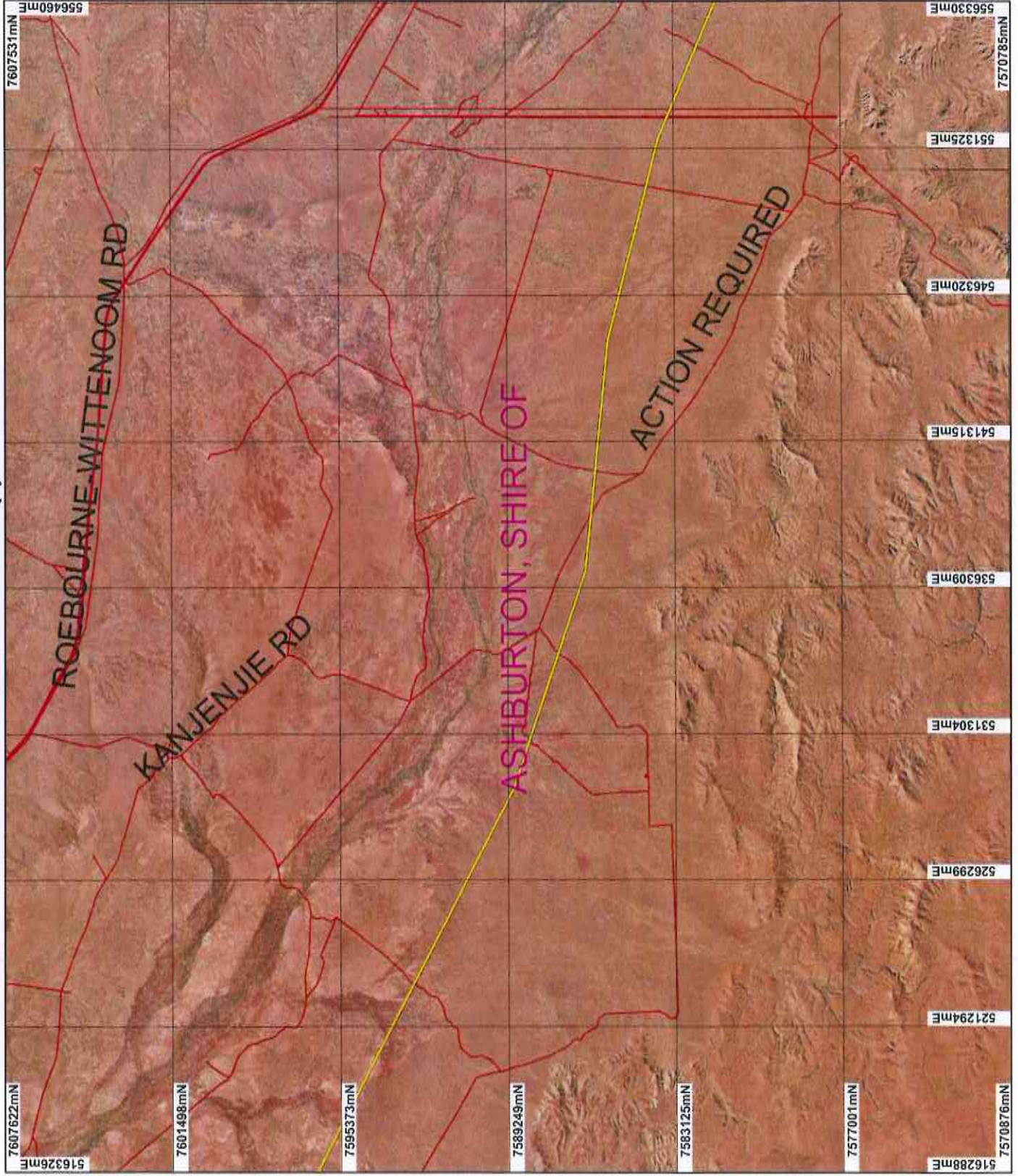
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Plan 6013/1 (f)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastral
- Clearing Instruments
- Areas Approved to Clear
- Meridia 1.4m Orthomosaic - Landgate 2001
- Yarrakoola 1.4m Orthomosaic - Landgate 2001
- Pannawonica 1.4m Orthomosaic - Landgate 2000
- Elvira 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billroth 1.4m Orthomosaic - Landgate 2000
- Mcraes 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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Please contact map author for details.



Scale 1:165331
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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M. Waincock Date: 12/6/14

M. Waincock

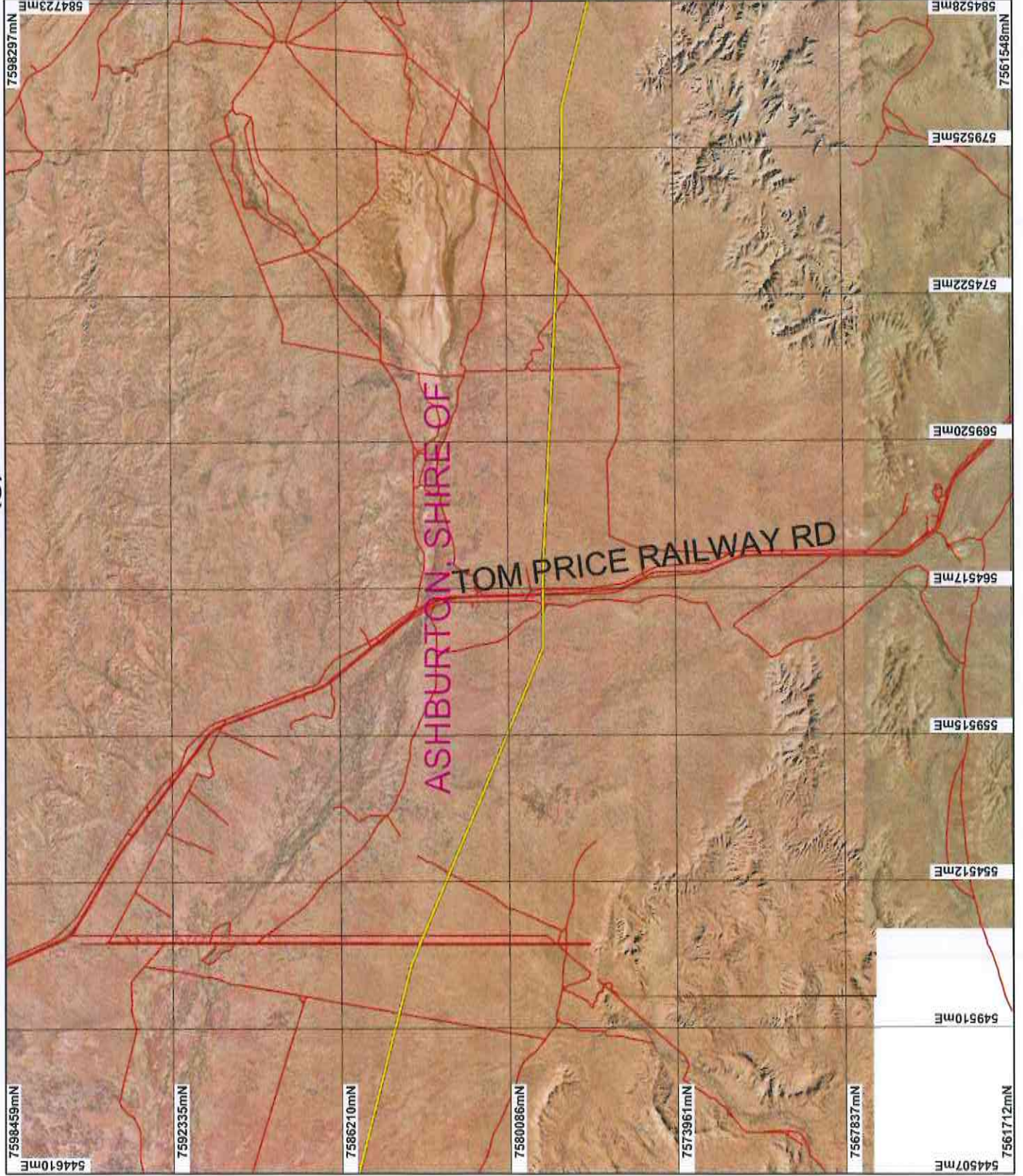
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Plan 6013/1 (g)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Marsdiep 1.4m Orthomosaic - Landgate 2001
- Yarraloola 1.4m Orthomosaic - Landgate 2001
- Panayawonjca 1.4m Orthomosaic - Landgate 2000
- Elvira 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billroth 1.4m Orthomosaic - Landgate 2000
- Mcrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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0 5 km

Scale 1:765276

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Geocentric Datum Australia 1984

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M. Wernock Date: 12/6/14

M. Wernock

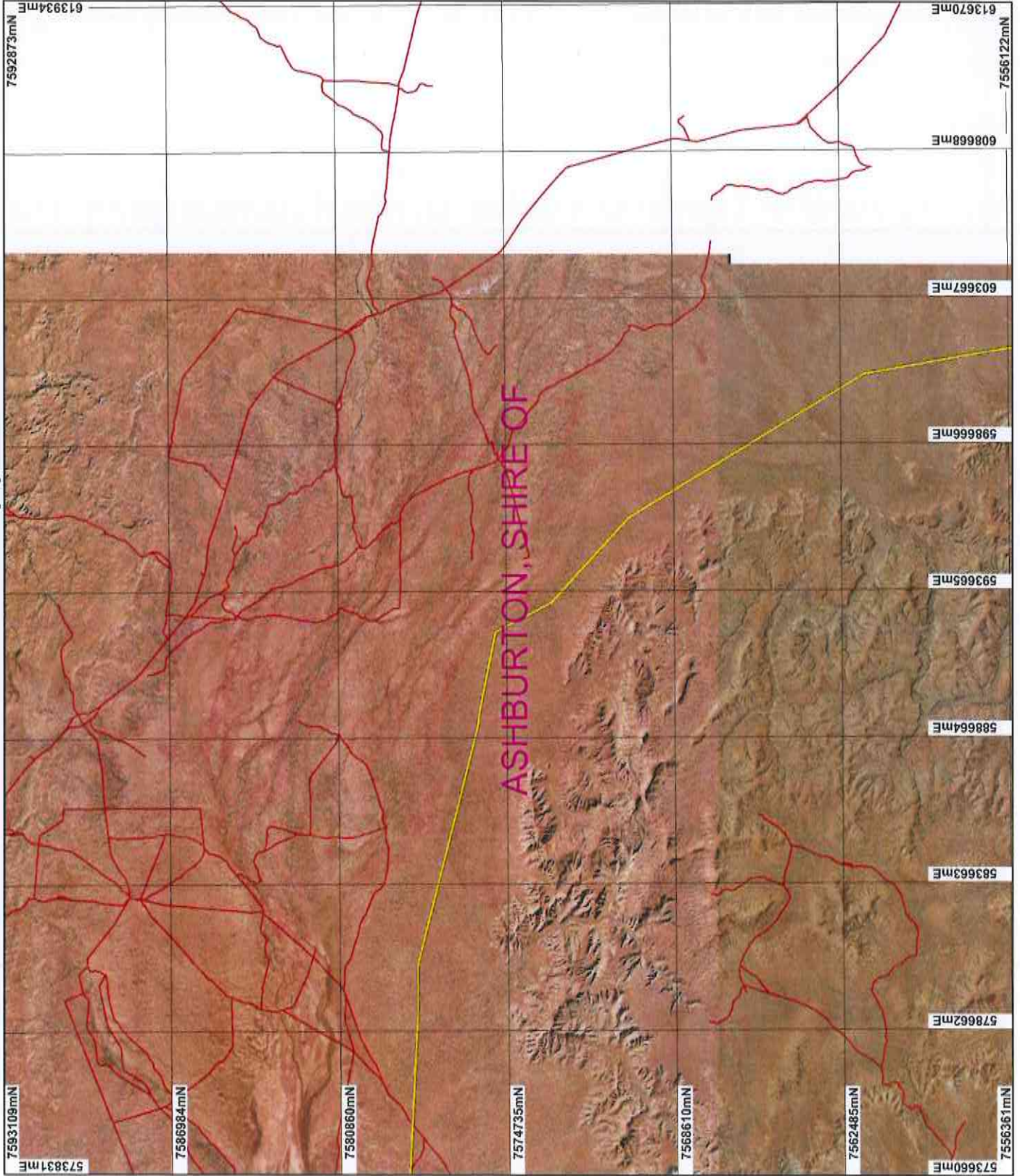
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Plan 6013/1 (h)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastral
- Clearing Instruments
- Areas Approved to Clear
- Mandlie 1.4m Orthomosaic - Landgate 2001
- Yarraloola 1.4m Orthomosaic - Landgate 2001
- Princes Highway 1.4m Orthomosaic - Landgate 2000
- Elvire 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billrooth 1.4m Orthomosaic - Landgate 2000
- Mirrae 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
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Geocentric Datum Australia 1994

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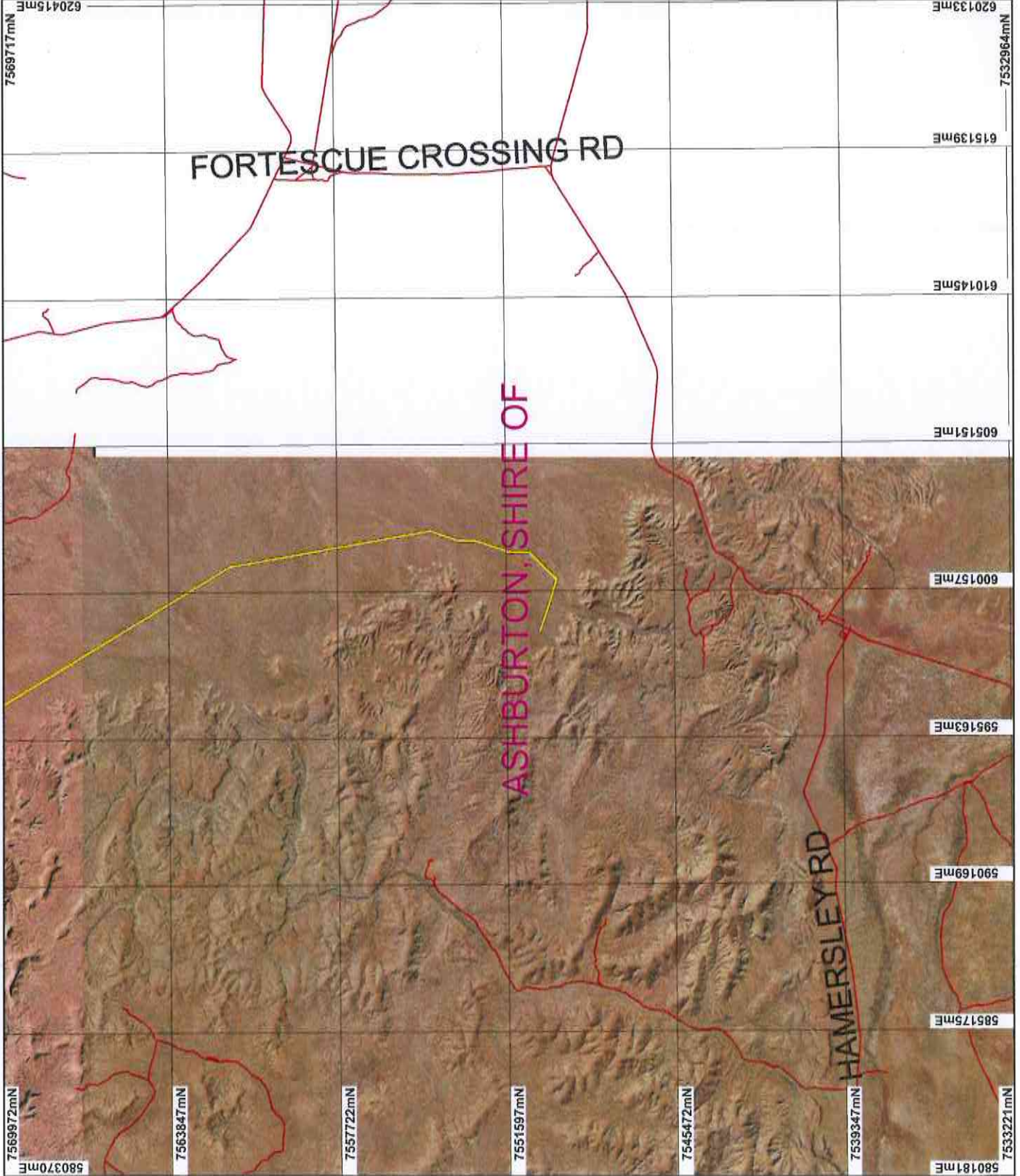
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M. Wilmack Date 12/6/14

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Plan 6013/1 (i)



LEGEND

- Local Government Authorities
- Road Centrelines
- Cadastral
- Clearing Instruments
- Areas Approved to Clear
- Merride 1.4m Orthomosaic - Landgate 2001
- Yarraloola 1.4m Orthomosaic - Landgate 2001
- Pannawonica 1.4m Orthomosaic - Landgate 2000
- Elvira 1.4m Orthomosaic - Landgate 2000
- Millstream 1.4m Orthomosaic - Landgate 2000
- Mount Billrooth 1.4m Orthomosaic - Landgate 2000
- Micrme 50cm Orthomosaic - Landgate 2004

* Project Data is denoted by asterisk.
This data has not been quality assured.
Please contact map author for details.

Scale 1:185102
(Approximate when reproduced at A4)

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M. Wisrock
Date 12/6/14

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

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Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 6013/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: DDG Fortescue River Pty Ltd

1.3. Property details

Property: LOT 174 ON PLAN 190732 (MARDIE 6714)
LOT 90 ON PLAN 215601 (Lot No. 90 NORTH WEST COASTAL MARDIE 6714)
LOT 91 ON PLAN 215601 (MARDIE 6714)
LOT 309 ON PLAN 63519 (Lot No. 309 NORTH WEST COASTAL FORTESCUE 6716)
LOT 54 ON PLAN 241547 (Lot No. 54 PANNAWONICA PANNAWONICA 6716)
LOT 313 ON PLAN 63520 (FORTESCUE 6716)
LOT 52 ON PLAN 54397 (FORTESCUE 6716)
LOT 53 ON PLAN 56850 (FORTESCUE 6716)
LOT 148 ON PLAN 93149 (HAMERSLEY RANGE 6716)
LOT 128 ON PLAN 240249 (FORTESCUE 6716)
LOT 61 ON PLAN 240249 (FORTESCUE 6716)
LOT 40 ON PLAN 242287 (HAMERSLEY RANGE 6716)
LOT 83 ON PLAN 238012 (CHICHESTER 6751)
LOT 9 ON PLAN 47815 (TOM PRICE 6751)
LOT 82 ON PLAN 220191 (CHICHESTER 6751)
PART LOT 154 ON PLAN 220164 (Lot No. 154 NORTH WEST COASTAL MARDIE 6714)
LOT 257 ON PLAN 30489 (MARDIE 6714)
LOT 206 ON PLAN 220090 (FORTESCUE 6716)
LOT 208 ON PLAN 220090 (FORTESCUE 6716)
LOT 245 ON PLAN 220090 (FORTESCUE 6716)
ROAD RESERVE (MARDIE 6714)
UNALLOCATED CROWN LAND (HAMERSLEY RANGE 6716)
UNALLOCATED CROWN LAND (HAMERSLEY RANGE 6716)
ROAD RESERVE (CHICHESTER 6751)
Local Government Area: Shire of Roebourne and Shire of Ashburton

1.4. Application

Clearing Area (ha) 881
No. Trees
Method of Clearing Mechanical Removal
For the purpose of: Water/gas/cable/pipeline/power installation

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 June 2014

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
Mapped Beard Vegetation Association 29 is described as Sparse low woodland; mulga, discontinuous in scattered groups	This application consists of 881 hectares of proposed clearing within multiple lots, road reserves and unallocated Crown land within the Shire of Roebourne and Shire of Ashburton, for the purpose of constructing, installing and operating a natural gas pipeline and access track.	Pristine: No obvious signs of disturbance (Keighery 1994)	The condition and description of the vegetation under application was determined via a Level 1 Flora and Vegetation Survey of the Fortescue River Gas Pipeline, undertaken by Mattiske Consulting (2013).
Mapped Beard Vegetation Association 82 is described as Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i>		To	

Mapped Beard Vegetation Association 111 is described as Hummock grasslands, shrub steppe; Eucalyptus gamophylla over hard spinifex

Mapped Beard Vegetation Association 173 is described as Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia wiseana* on basalt

Mapped Beard Vegetation Association 175 is described as Short bunch grassland - savanna/grass plain (Pilbara)

Mapped Beard Vegetation Association 601 is described as Mosaic: Sedgeland; various sedges with very sparse snakewood / Hummock grasslands, shrub-steppe; kanji over soft spinifex

Mapped Beard Vegetation Association 603 is described as Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex

Mapped Beard Vegetation Association 605 is described as Hummock grasslands, shrub steppe; *Acacia pachycarpa* & waterwood over soft spinifex

Mapped Beard Vegetation Association 609 is described as Mosaic: Hummock grasslands, open low tree steppe; bloodwood with sparse kanji shrubs over soft spinifex / Hummock grasslands, open low tree steppe; snappy gum over *Triodia wiseana* lateritic crust

Mapped Beard Vegetation Association 629 is described as Mosaic: Short bunch grassland - savannah/grass plain (Pilbara) / Hummock grasslands, grass steppe; hard spinifex *Triodia wiseana*

Mapped Beard Vegetation Association 644 is described as Hummock grasslands, open low tree steppe; mulga & snakewood over soft spinifex & *T. basedowii*

Mapped Beard Vegetation Association 645 is described as Hummock grasslands, shrub steppe; kanji & snakewood over soft spinifex & *T. wiseana* (Shepherd et al, 2001)

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)

Thirty vegetation communities were delineated and mapped across the survey area. Much of the survey area contains a mosaic of sparse *Acacia* spp. shrubland and open *Triodia* spp. hummock grassland on flats to low natural relief, interspersed with creek and flow line associations of predominantly *Eucalyptus victrix* / *Eucalyptus camaldulensis* dominated macro-channels and *Corymbia hamersleyana*/*Acacia* spp. dominated micro-channels and flood-out zones.

Mid slope and ridge associations contain species such as *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia inaequilatera*, *Acacia maitlandii* and *Grevillea pyramidalis*. Soft spinifex and /or mixed tussock grasses are common on flats and lower slopes, with hard spinifex (e.g. *Triodia wiseana*) more dominant higher in the landscape (Mattiske Consulting, 2013).

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 proposed clearing consists of up to 881 hectares within multiple lots, road reserves and unallocated Crown land within the Shire of Roebourne and Shire of Ashburton, for the purpose of constructing, installing and operating a natural gas pipeline and access track.

The majority of the vegetation under application is in excellent to pristine (Keighery, 1994) condition (Mattiske Consulting, 2013). Structurally, vegetation communities show minimal visible signs of disturbance and weed densities are mostly low (Mattiske Consulting, 2013).

A total of 353 vascular plant taxa which are representative of 135 plant genera and 43 plant families were recorded within survey. The majority of the taxa recorded are representative of the Fabaceae (77 taxa), Poaceae (63 taxa) and Malvaceae (40 taxa) families (Mattiske Consulting, 2013). Of the 353 taxa recorded 69.4 per cent were perennial, 17.8 per cent were annual and 12.7 per cent were both annual and perennial.

A level 1 Flora and Vegetation Survey undertaken in September 2013 did not identify the presence of any rare flora within the project area. One priority 3 flora species was recorded approximately 100 metres from the application area and the proponent has advised that this occurrence will not be impacted by the proposed works (Mattiske Consulting, 2013).

One priority ecological community (PEC) was inferred to occur within the survey area, namely the priority 3 Mitchell grass plains (*Astrebla* spp.) on gilgai; part of the 'Four plant assemblages of the Wona Land System' (Mattiske Consulting, 2013). Floristic aspects of this PEC were inferred to occur within Floristic Community 15 (FL 15), one of 30 communities identified within the application area (Mattiske Consulting, 2013). Floristic Community 15 is described as 'Astrebla lappacea, *Aristida latifolia*, *Panicum decompositum* low tussock grassland, occurring on red clayey loams to red cracking clays' (Mattiske Consulting, 2013).

The Department of Parks and Wildlife (Parks and Wildlife, 2014) has advised that FL 15 is more likely to represent the Brockman Iron cracking clay communities of the Hamersley Range (priority 1) PEC, described as 'rare tussock grassland dominated by *Astrebla lappacea* in the Hamersley Range on the Brockman Land System'. The section of the Brockman Land system that was mapped within the survey area totals 485.56 hectares with a predicted impact of 0.65 per cent of this area (3.15 hectares which is approximately 0.03 per cent of the total area of this PEC mapped).

The application area also intersects three recently mapped occurrences of the 'Four plant assemblages of the Wona Land System' PEC to the east of Pannawonica (Parks and Wildlife, 2014). The section of the Wona Land system mapped within the survey area totals 541.60 hectares, with a predicted impact of 0.28 per cent of these mapped PECs (1.5 hectares).

Given the abovementioned impact size for each PEC, the proposed clearing is unlikely to have a significant impact on the conservation status of these communities.

The Pilbara Bioregion, Shires of Roebourne and Ashburton and mapped Beard Vegetation Associations all retain greater than 97 per cent pre-European vegetation remaining (Government of Western Australia, 2013).

A fauna survey of the application area determined that 27 conservation significant fauna species have the potential to occur within the application area (Ninox Wildlife Consulting, 2013). Given the linear shape of the application area and that the landscape surrounding the application area is extensively vegetated, the proposed clearing is not likely to impact on significant habitat for indigenous fauna, as comparable fauna habitat is likely to occur immediately adjacent to the proposed pipeline alignment.

The proponent has prepared a Draft Construction Environment Plan (CEP) which outlines a commitment to rescue fauna that become trapped in the trench twice daily (Eco Logical Australia, 2014), with records of fauna trapped to be maintained throughout the works. The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken.

Eleven introduced (exotic) flora taxa were recorded within the survey area. Of these, one taxon, *Jatropha gossypifolia* is a Declared Pest. *Cenchrus ciliaris* and *Vachellia farnesiana*, both containing high environmental weed ratings, were recorded in high densities on site (Mattiske Consulting, 2013). The proposed clearing will increase the risk of weeds spreading into adjacent vegetated areas. The proponent has prepared a Draft Construction Environment Plan which outlines several hygiene measures to minimise the potential for the spread and introduction of weeds on site. It is advised that, should a weed outbreak occur, active weed control will be carried out in consultation with the relevant authorities (Eco Logical Australia, 2014). The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken. Furthermore the proponent will be required to remove or kill any weeds growing within the area of proposed clearing at least once in every 6 month period for the term of the works.

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

Methodology

References:

- Eco Logical Australia (2014)
- Government of Western Australia (2013)
- Mattiske Consulting (2013)
- Keighery (1994)
- Parks and Wildlife (2014)
- Ninox Wildlife Consulting (2013)

(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

A fauna survey of the application area determined that 27 conservation significant fauna species have the potential to occur within the application area (Ninox Wildlife Consulting, 2013). Several of these species are migratory avian fauna, and the proposed linear clearing of 881 hectares within an extensively vegetated landscape is unlikely to impact on migratory species.

With regards to non-migratory conservation significant fauna, nine species have been identified as highly likely to occur on site, these being, bush stone-curlew (*Burhinus grallarius*), Australian bustard (*Ardeotis australis*) Peregrine falcon (*Falco peregrinus*), northern quoll (*Dasyurus hallucatus*), Lakeland Downs mouse (*Leggadina lakedownensis*), western pebble-mouse (*Pseudomys chapmani*), Pilbara olive python (*Liasis olivaceous barroni*), and two species of skink (*Notoscincus butleri* and *Ctenotus uber johnstonei*) (Ninox Wildlife Consulting, 2013).

The fauna survey identified 11 major fauna habitats on site, ranging from open woodlands over spinifex, Acacia shrublands over spinifex on flats, slopes and ridges, to open grassy plains, and major and minor gullies. Three of these habitats were deemed to be of particular importance to conservation significant fauna, these being, major creeklines with large eucalypts, rocky gullies and gorges, and cracking clay grasslands (Ninox Wildlife Consulting, 2013). Given that the application area is linear in shape, the resultant narrow zone of impact within these areas is not likely to significantly impact these habitats, or the fauna that reside within them.

The landscape surrounding the application area is extensively vegetated and provides large, connected areas of suitable habitat for the abovementioned fauna within the local region. Therefore the vegetation under application is not likely to comprise significant habitat for indigenous fauna. The proponent has advised that large trees within or immediately adjacent to the proposed pipeline corridor will be flagged for avoidance. It is also advised that where habitat trees are required for removal, fauna handlers will inspect for fauna immediately prior to clearing (Eco Logical Australia, 2014).

The most significant potential impact to conservation significant fauna is likely to be entrapment within the open gas pipeline trench, resulting in death or injury. Open trenches can have a significant impact on terrestrial fauna as they inadvertently become pit traps and may result in rapid dehydration, starvation and predation by larger, more mobile fauna (Ninox Wildlife Consulting, 2013).

The proponent has provided a Draft Construction Environment Plan (CEP) with the application which outlines a commitment to rescue fauna that have become trapped in the trench twice daily, within three hours of sunrise and prior to sunset, by a trained fauna handler with a licence to take fauna. The draft CEP states that no part of the trench shall remain open for more than 14 days, fauna shelters will be placed in open trenches, trench plugs and fauna exit ramps will be installed at both ends of the trenches and construction will be planned to avoid open trenching during November to March to minimise fauna stress in hotter months (Eco Logical Australia, 2014). The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken.

The proponent will also be required to revegetate the areas of proposed clearing that are not required for operational use, which will help to re-establish any fauna habitat values lost. It is estimated that approximately 746 hectares of the 881 hectares proposed for clearing will be revegetated. The draft CEP also indicates a commitment to restoring habitat features such as rocks post works to restore continuity of fauna habitat (Eco Logical Australia, 2014).

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

Methodology References:
-Eco Logical Australia (2014)
-Ninox Wildlife Consulting (2013)

(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**
There are no rare flora species mapped within the local area (20 kilometre radius), however a Level 1 Flora and Vegetation Survey undertaken by Mattiske Consulting (2013) determined that one species of rare flora has a possibility of occurring within the application area. This species is a woody perennial herb or shrub that flowers between August and January (Western Australian Herbarium, 2008-).

The flora survey was undertaken in September 2013, therefore it is likely that any occurrences of this species would have been recorded in the survey. The survey did not identify this species within the project area, therefore it is not likely that the vegetation under application includes, or is necessary for the continued existence of this species. The proponent has committed to educating staff (as per the Draft Construction Environmental Plan) on the appearance and preferred habitat of the abovementioned rare flora to further eliminate the potential for impacts to this species.

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

Methodology References:
-Mattiske Consulting (2013)
-Western Australian Herbarium (2008-)

GIS Databases:
-SAC Bio Datasets (Accessed May 2014)

(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 threatened ecological communities (TECs) mapped within the local area (20 kilometre radius) and a Level 1 Flora and Vegetation Survey undertaken by Mattiske Consulting (2013) in September determined that no TECs were inferred to occur within the survey area (Mattiske Consulting, 2013).

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

Methodology References:

-Mattiske Consulting (2013)

GIS Databases:

-SAC Bio Datasets (Accessed May 2014)

-SAC Bio Datasets (Accessed May 2014)

(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 national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The Pilbara Bioregion, Shires of Roebourne and Ashburton and mapped Beard Vegetation Associations all retain greater than 97 per cent pre-European vegetation remaining (Government of Western Australia, 2013). Given that these figures are much greater than the abovementioned 30 per cent threshold, the proposed clearing is not within an extensively cleared area.

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

Pre-European	Current Extent	Remaining Extent	Extent in DEC Managed Lands	
	(ha)	(ha)	(%)	(%)
IBRA Bioregion*				
Pilbara	17,808,657	17,733,583	99	8
Shire*				
Shire of Ashburton	10,086,657	10,059,963	99	1
Shire of Roebourne	1,529,966	1,500,852	98	1
Beard Vegetation Association				
29	1,133,219	1,132,939	99	2
82	2,563,583	2,550,898	99	11
111	550,287	550,232	99	2
173	1,752,521	1,747,677	99	14
175	507,860	507,466	99	5
601	109,687	109,618	99	0
609	74,186	72,765	98	0
629	37,191	37,178	99	1
644	27,199	27,069	99	0
645	84,670	84,658	99	0

Government of Western Australia (2013)

Methodology References:

-Government of Western Australia (2013)

-Commonwealth of Australia (2001)

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

Comments Proposal is at variance to this Principle

The application area intersects several creeks associated with Fortescue River, namely Caliwinga Creek (a major tributary), Weelumurra Creek, Asbestos Creek, and Peter Creek which is associated with Robe River (Mattiske Consulting, 2013).

The Flora and Vegetation Survey identified that significant riparian vegetation was identified within the western portion of the proposal area, with no significant riparian vegetation identified in the eastern portion (Mattiske Consulting, 2013). The proponent has advised that the proposed works have been aligned with Pannawonica Road in the western section as far as practicable, to reduce potential impacts to riparian vegetation (Eco Logical Australia, 2014).

Given the above, the proposed clearing is at variance to this Principle.

The proponent has prepared a Draft Construction Environment Plan (CEP) for the proposed works which contains measures to minimise impacts to watercourses. The draft CEP outlines that any potential impacts to minor watercourses will be temporary with management measures aimed at stabilising creek banks and progressive rehabilitation. Other management measures include, construction during the dry season and avoidance during rainfall to ensure most watercourses are dry, retention of large stabilising trees on creek banks and stabilisation and rehabilitation of watercourses progressively following construction (Eco Logical Australia, 2014). The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken.

Methodology References:
-Mattiske Consulting (2013)
-Eco Logical Australia (2014)

GIS Databases:
-Hydrography, linear
-Hydrography, hierachy

(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 flora and vegetation survey identified 22 land systems, based on landforms, soils, vegetation and drainage patterns, within the area of proposed clearing (Mattiske Consulting, 2013). The soils on site are recognised as red shallow sandy soils, stony soils on the hills and ranges and various sandplains. Other soil types include red earths overlying hardpan, cracking and non-cracking clay soils and duplex soils (Mattiske Consulting, 2013).

Earthy sands and leached sands are highly susceptible to wind erosion, however given the linear shape of the application area, and extensively vegetated surrounding landscape, it is not likely that wind erosion will result in appreciable land degradation.

Given that clay soils may occur on site and that some riparian vegetation is proposed for removal, there is the potential for water erosion to occur post clearing. However, given that construction is to occur during dry months and the proponent has advised that large stabilising trees will be retained wherever possible (Eco Logical Australia, 2014), it is not expected that water erosion will result in appreciable land degradation, particularly given the linear shape of the application area and extensively vegetated surrounding landscape.

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

Methodology References:
-Mattiske Consulting (2013)
-Eco Logical Australia(2013)

(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 may be at variance to this Principle

The application area does not occur within any mapped conservation areas, however it does intersect a portion of the proposed West Hamersley Range Conservation Park (Eco Logical Australia, 2014).

The proponent has advised that approximately 11.4 hectares of this future conservation park is proposed for clearing. It is advised that 1.7 hectares will remain permanently cleared for an access track, whereby already degraded areas and existing tracks will be utilised where possible (Eco Logical Australia, 2014).

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

It is advised that 9.7 hectares of the proposed disturbance footprint of 11.4 hectares will be not be required for operational use, therefore the proponent will be required to revegetate this temporary cleared area back to its original condition post clearing.

There is the potential for weeds to spread into this proposed conservation area, which may be of particular concern given that, *Jatropha gossypifolia*, a Declared Pest and *Cenchrus ciliaris* and *Vachellia farnesiana* (high environmental weed ratings), were recorded in high densities on site. The proponent has prepared a Draft Construction Environment Plan (CEP) which outlines several hygiene measures to minimise the potential for the spread and introduction of weeds on site, with specific hygiene risk areas identified. It is advised that should a weed outbreak occur, active weed control will be carried out in consultation with the relevant authorities (Eco Logical Australia, 2014). The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken. Furthermore the proponent will be required to remove or kill any weeds growing within the area of clearing at least once in every 6 month period for the term of the works.

Methodology References:
-Eco Logical Australia (2014)

GIS Databases:
-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 may be at variance to this Principle

The application area intersects several creeks associated with Fortescue River, namely Caliwinga Creek (a major tributary), Weelumurra Creek, Asbestos Creek, and Peter Creek which is associated with Robe River (Mattiske Consulting, 2013).

These watercourses flow after major rainfall events, therefore the proposed clearing may cause short term issues with surface water sedimentation of these creeks. Increased sedimentation of the Fortescue River and Ord river, through run-off associated with these minor watercourses may also occur.

Groundwater salinity mapped within the application area is between 500 and 3000 milligrams per litre (marginal to brackish). Given this relatively low salinity level, linear shape of the application area and extensively vegetated landscape, it is considered that the proposed clearing will not lead to a perceptible rise in the watertable and thus an increase in groundwater salinity levels.

The proposed clearing may be at variance to this Principle. The proponent has advised that any potential impacts to minor watercourses will be temporary with management measures aimed at stabilising creek banks and progressive rehabilitation in accordance with a Construction and Environment Plan. Other management measures to reduce potential impacts will include construction during the dry season and avoidance during rainfall, to ensure most watercourses are dry, retention of large stabilising trees on creek banks and stabilisation and rehabilitation of watercourses progressively following construction (Eco Logical Australia, 2014). The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken.

Methodology References:
-Mattiske Consulting (2013)
-Eco Logical Australia (2014)

(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

Given the linearity, low annual rainfall (400 millimetres), flat topography and extensively vegetated landscape, it is not likely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

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

Methodology GIS Databases:
-Rainfall, Mean Annual

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

Comments

The proposed clearing consists of up to 881 hectares within multiple lots, road reserves and unallocated Crown land within the Shire of Roebourne and Shire of Ashburton, for the purpose of constructing, installing and operating a natural gas pipeline and access track. The proposed pipeline is approximately 266 kilometres long and is required to transport natural gas from the Dampier to Bunbury Natural Gas Pipeline to the Solomon Power Station.

The proponent referred the proposed works to the Environmental Protection Authority (EPA) in January 2014. The EPA decided not to assess the proposed works, as it primarily concerns the clearing of native vegetation and can be managed under Part V, Division 2 of the Environmental Protection Act 1986 (EPA, 2014).

The application area is within the Millstream Water Reserve, recognised as a priority 1 and 2 Public Drinking Water Source Area and the Pilbara Groundwater and Surface Water Area. The Department of Water was notified of the proposed clearing and chose not to provide comment.

There have been no submissions received from the general public in response to the proposed clearing.

The proposed clearing falls within several Aboriginal Sites of Significance. 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.

The application area falls within several native title claim areas. Notification of the proposed clearing to the claimants and the representative bodies of these claimants has occurred, and no comment have been received to date.

The Shire of Roebourne has advised that the Shire has no objection to the proposed works (Shire of Roebourne, 2014).

The proponent has provided a Draft Construction Environment Plan (CEP) for the proposed pipeline which outlines a range of commitments to mitigating the environmental impacts of the proposed works. The proponent will be required to submit a final copy of the CEP for approval before any clearing is undertaken.

Methodology References:
-EPA (2014)
-Shire of Roebourne (2014)

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Eco Logical Australia (2014) Construction Environment Plan for the Fortescue River Gas Pipeline. Additional information for CPS 6013/1 DER Ref A729319.
- EPA (2014) Additional information for Clearing Permit Application CPS 6013/1.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (2013) Level 1 Flora and Vegetation Survey undertaken September 2013. Additional information for CPS 6013/1 DER Ref A729319.
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- Parks and Wildlife (2014) Species and Communities advice for Clearing Permit Application CPS 6013/1 DER Ref A765970
- 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.
- Shire of Roebourne (2014) Direct interest submission for Clearing Permit Application CPS 6013/1. DER Ref A742935.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed May 2014).