



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10696/1
Permit Holder:	Pilgangoora Operations Pty Ltd
Duration of Permit:	From 14 January 2025 to 14 January 2030

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

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The Permit Holder is authorised to clear *native vegetation* for the purpose of establishing an accommodation camp.

2. Land on which clearing is to be done

Miscellaneous Licence 45/760

3. Clearing authorised

The Permit Holder must not clear more than 140 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorized

The permit holder must not clear any *native vegetation* after 14 January 2030.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this Permit, the Permit Holder must apply the following principles, set out in descending order of preference:

- (i) avoid the clearing of *native vegetation*;
- (ii) minimise the amount of *native vegetation* to be cleared; and
- (iii) reduce the impact of clearing on any environmental value.

6. Weed management

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following measures to minimise the risk of 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 known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Vegetation management

- (i) The Permit Holder shall clear no more than 0.5 hectares of *riparian vegetation*; and
- (ii) where a *watercourse* or *drainage line* is to be impacted by clearing, the permit holder shall ensure that the existing surface flow is maintained, or reinstated downstream into existing natural drainage lines.

8. Directional clearing

The Permit Holder must conduct clearing activities in a slow, progressive manner toward adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

9. Fauna management – *Liasis olivaceus barroni* (Pilbara olive python)

- (a) Within fourteen (14) days prior to and for the duration of clearing activities, the Permit Holder must engage a *fauna specialist* to inspect the area to be cleared for the presence of *Liasis olivaceus barroni* (Pilbara olive python) and termite mounds.
- (b) Clearing activities must cease in any area where *Liasis olivaceus barroni* (Pilbara olive python) are identified until either:
 - (i) The individual(s) has moved on from that area to adjoining *suitable habitat*; or
 - (ii) The individual(s) has been removed by a *fauna specialist*.
- (c) Any *Liasis olivaceus barroni* (Pilbara olive python) individual(s) removed in accordance with condition 9(b)(ii) must be relocated by a *fauna specialist* to a *suitable habitat*.
- (d) Where the Permit Holder intends to undertake clearing within 20 metres of a termite mound identified under condition 9(a), the termite mound must be relocated by an *environmental specialist* to a location at least 20 metres from any area where clearing will be undertaken.
- (e) Termite mounds relocated under condition 9(d) must be moved in either:
 - (i) One singular piece; or
 - (ii) Several large sections that will allow for the termite mound to be reconstructed in a way that maintains the stability of the mound, once it has been relocated; or
 - (iii) As otherwise approved by the *CEO*.

- (f) Where fauna is identified under condition 9(a), the Permit Holder must within 14 calendar days provide the following records to the *CEO*:
- (i) the number of individuals identified;
 - (ii) the date each individual was identified;
 - (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (iv) the number of individuals removed and relocated;
 - (v) the relevant qualifications of the *fauna specialist* undertaking removal and relocation;
 - (vi) the date each individual was removed;
 - (vii) the method of removal;
 - (viii) the date each individual was relocated;
 - (ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

10. Fauna management – *Macrotis lagotis* (greater bilby)

- (a) Within fourteen (14) days prior to undertaking any clearing authorised under this permit, for the areas cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must engage a *fauna specialist* to:
- (i) undertake surveys using transects spaced at 100 metres on average to identify evidence of use by the greater bilby (*Macrotis lagotis*); and
 - (ii) where evidence of greater bilby use is identified under *condition* 10(a)(i), undertake surveys using transects spaced at 20 metres on average, to identify evidence of burrows that may be suitable for greater bilby use.
- (b) Where potential greater bilby burrow/s are identified under *condition* 10(a), the permit holder must engage a *fauna specialist* to:
- (i) flag the location of the burrow/s; and
 - (ii) inspect the burrow/s and determine whether the burrow/s are *occupied*.
- (c) Where an *occupied* burrow is identified under *condition* 10(b), the permit holder must engage a *fauna specialist* to:
- (i) monitor the burrow with remote cameras for greater bilby use for a minimum of three (3) consecutive nights;
 - (ii) where no evidence of greater bilby activity is identified under *condition* 10(c)(i), the burrow shall be deemed as *un-occupied* and the permit holder must engage a *fauna specialist* to:
 - A. carefully excavate the burrow by hand, and remove and relocate any native vertebrate fauna found within the burrow; and
 - B. collapse and fill the burrow immediately after the *fauna specialist* has confirmed that no native vertebrate fauna are present within the burrow.
 - (iii) where evidence of greater bilby use is identified under *condition* 10(c)(i),

the permit holder must engage a *fauna specialist* to:

- A. continue to monitor the burrow for greater bilby activity;
 - B. implement displacement techniques such as deliberate disturbance of the burrow entrance, while ensuring the disturbance does not prevent greater bilby from exiting the burrow; and
 - C. once greater bilby displacement from the burrow is confirmed, stop monitoring, and undertake the actions required under *condition 10(c)(ii)A* and *condition 10(c)(ii)B*.
- (d) If the greater bilby has not moved on from an *occupied* burrow under *condition 10(c)(iii)*, the permit holder must, no earlier than seven (7) days prior to clearing, engage a *fauna specialist* to remove and relocate the identified greater bilby to an area of *suitable habitat*, in accordance with a section 40 authorisation under the *Biodiversity Conservation Act 2016*.
- (e) Immediately after the greater bilby has been relocated under *condition 10(d)*, the permit holder must engage a *fauna specialist* to undertake the actions required under *condition 10(c)(ii)A* and *condition 10(c)(ii)B*.
- (f) Within 24 hours prior to undertaking clearing authorised under this permit, the permit holder must engage a *fauna specialist* to re-inspect the flagged burrow/s identified under *condition 10(b)(i)* for evidence of re-excavation by greater bilby.
- (g) Where re-excavated greater bilby burrow/s are identified under *condition 10(f)*, the permit holder must engage a *fauna specialist* to:
- (i) flag the location of the burrow/s; and
 - (ii) inspect the burrow/s and determine whether the burrow/s are *occupied*.
- (h) Where an *occupied* burrow is identified under *condition 10(g)(ii)*, the permit holder must engage a *fauna specialist* to:
- (i) remove and relocate any identified greater bilby from the burrow to an area of *suitable habitat*, in accordance with a section 40 authorisation under the *Biodiversity Conservation Act 2016*; and
 - (ii) immediately after the greater bilby has been relocated under *condition 10(h)(i)*, undertake the actions required under *condition 10(c)(ii)A* and *condition 9(c)(ii)B*.
- (i) Where an *un-occupied* burrow is identified under *condition 10(g)(ii)*, the permit holder must engage a *fauna specialist* to undertake the actions required under *condition 10(c)(ii)A* and *condition 10(c)(ii)B*.
- (j) Where any greater bilby burrows are identified under *condition 10(a)* or *10(f)*, and any greater bilby is relocated under *condition 10(d)* or *10(h)*, the permit holder must include the following in a report to be submitted to the *CEO* within two (2) months of undertaking any clearing authorised under this permit:
- (i) the location of any burrow identified including a description of whether the burrow was *occupied*, using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the remote camera monitoring actions undertaken under *condition 10(c)*;
 - (iii) the date and time that burrows have been excavated and collapsed under *conditions 10(c)*, *10(e)*, *10(h)* and *10(i)*;

- (iv) the date and time greater bilby are recorded as independently moving on from an *occupied* burrow under *condition* 10(c);
- (v) the gender of each greater bilby captured and relocated under *condition* 10(d) or 10(h);
- (vi) the location of any greater bilby captured under *condition* 10(d) or 10(h), using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (vii) the date, time and vegetation type at each location where greater bilby are captured under *condition* 10(d) or 10(h);
- (viii) the location of any greater bilby relocated under *condition* 10(d) or 10(h), using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (ix) the date, time and vegetation type at each location where greater bilby are relocated under *condition* 10(d) or 10(h);
- (x) the name of the *fauna specialist* that relocated greater bilby under *condition* 10(d) or 10(h); and
- (xi) a copy of the fauna licence authorising the relocation of greater bilby under *condition* 10(d) or 10(h).

11. Fauna management – *Pezoporus occidentalis* (night parrot)

- (a) Within two months prior to undertaking clearing activities, the Permit Holder must engage a *fauna specialist* to inspect the area to be cleared for the presence of *Pezoporus occidentalis* (night parrot) in accordance with the *Pezoporus occidentalis* (night parrot) Guidelines.
- (b) Prior to undertaking clearing activities, the Permit Holder must provide to the CEO a report that includes the results of the survey required under condition 11(a).
- (c) Where *Pezoporus occidentalis* (night parrot) individuals are identified during the survey required under condition 11(a), the Permit Holder may not undertake clearing activities unless otherwise approved by the CEO.
- (d) Where approval is being sought from the CEO to undertake clearing activities under condition 11(c) the Permit Holder shall provide the following information:
 - (i) the number of individuals identified;
 - (ii) the date each individual was identified;
 - (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA 2020), expressing the geographic coordinates in Eastings and Northings or decimal degrees;
 - (iv) areas of suitable habitat for *Pezoporus occidentalis* (night parrot);
 - (v) management measures to minimise impacts on *Pezoporus occidentalis* (night parrot).

PART III - RECORD KEEPING AND REPORTING

12. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4; and (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with condition 5; and (g) actions taken to manage and mitigate impacts to <i>riparian vegetation</i> in accordance with condition 6; (h) actions taken to manage and mitigate impacts to <i>Liasis olivaceus barroni</i> (Pilbara olive python) in accordance with condition 8; (i) actions taken to manage and mitigate impacts to <i>Macrotis lagotis</i> (greater bilby) in accordance with condition 9; (j) actions taken to manage and mitigate impacts to <i>Pezoporus occidentalis</i> (night parrot) in accordance with condition 10.
2.	In relation to vegetation management condition 7	<ul style="list-style-type: none"> (a) actions taken to manage and mitigate impacts to <i>riparian vegetation</i> in accordance with condition 7; and (b) the size and location of <i>riparian vegetation</i> cleared using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings.
3.	In relation to fauna management conditions 9 10 and 11	<ul style="list-style-type: none"> (a) actions taken to manage and mitigate impacts to <i>Liasis olivaceus barroni</i> (Pilbara olive python) in accordance with condition 9; (b) actions taken to manage and mitigate impacts to <i>Macrotis lagotis</i> (greater

No.	Relevant matter	Specifications
		bilby) in accordance with condition 10; and (c) actions taken to manage and mitigate impacts to <i>Pezoporus occidentalis</i> (night parrot) in accordance with condition 11.

13. Reporting

- (a) The Permit Holder shall provide a report to the *CEO* by 31 July each year for the life of this Permit, demonstrating adherence to all *conditions* of this Permit, and setting out the records required under Condition 11 of this Permit in relation to clearing carried out between 1 July and 30 June of the previous financial year.
- (b) If no clearing authorised under this Permit was undertaken between 1 July and 30 June of the previous financial year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* by 31 July of each year.
- (c) Prior to 14 January 2030, the Permit Holder must provide to the *CEO* a written report of records required under Condition 12 of this Permit where these records have not already been provided under Condition 13(a) or 13(b) of this Permit.

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearance survey/s	means a search of immediate impact areas prior to clearing to locate fauna. The clearance survey should focus on locating burrows, recent foraging signs, fresh tracks and scats.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
drainage line/s	means a natural depression that carries surface water runoff.
environmental specialist	means a person 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, or who is approved by the <i>CEO</i> as a suitable environmental specialist.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the <i>CEO</i> as a

Term	Definition
	suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i> .
fill	means material used to increase the ground level, or to fill a depression.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
occupied	means currently occupied, or where uncertainty exists, potentially occupied, by the greater bilby (<i>Macrotis lagotis</i>).
<i>Pezoporus occidentalis</i> (night parrot) Guidelines	means the Guidelines for determining the likely presence and habitat usage of night parrot (<i>Pezoporus occidentalis</i>) in Western Australia.
riparian vegetation	has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
suitable habitat	means habitat known to support either Greater Bilby (<i>Macrotis lagotis</i>), <i>Liasis olivaceus barroni</i> (Pilbara olive python) or (<i>Pezoporus occidentalis</i> (night parrot) within the known current distribution of the species
watercourse	has the meaning given to it in section 3 of the <i>Rights in Water and Irrigation Act 1914</i> .
weeds	means any plant – <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

B. Walker.

Belinda Walker
EXECUTIVE DIRECTOR
Green Energy

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

20 December 2024

Schedule 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

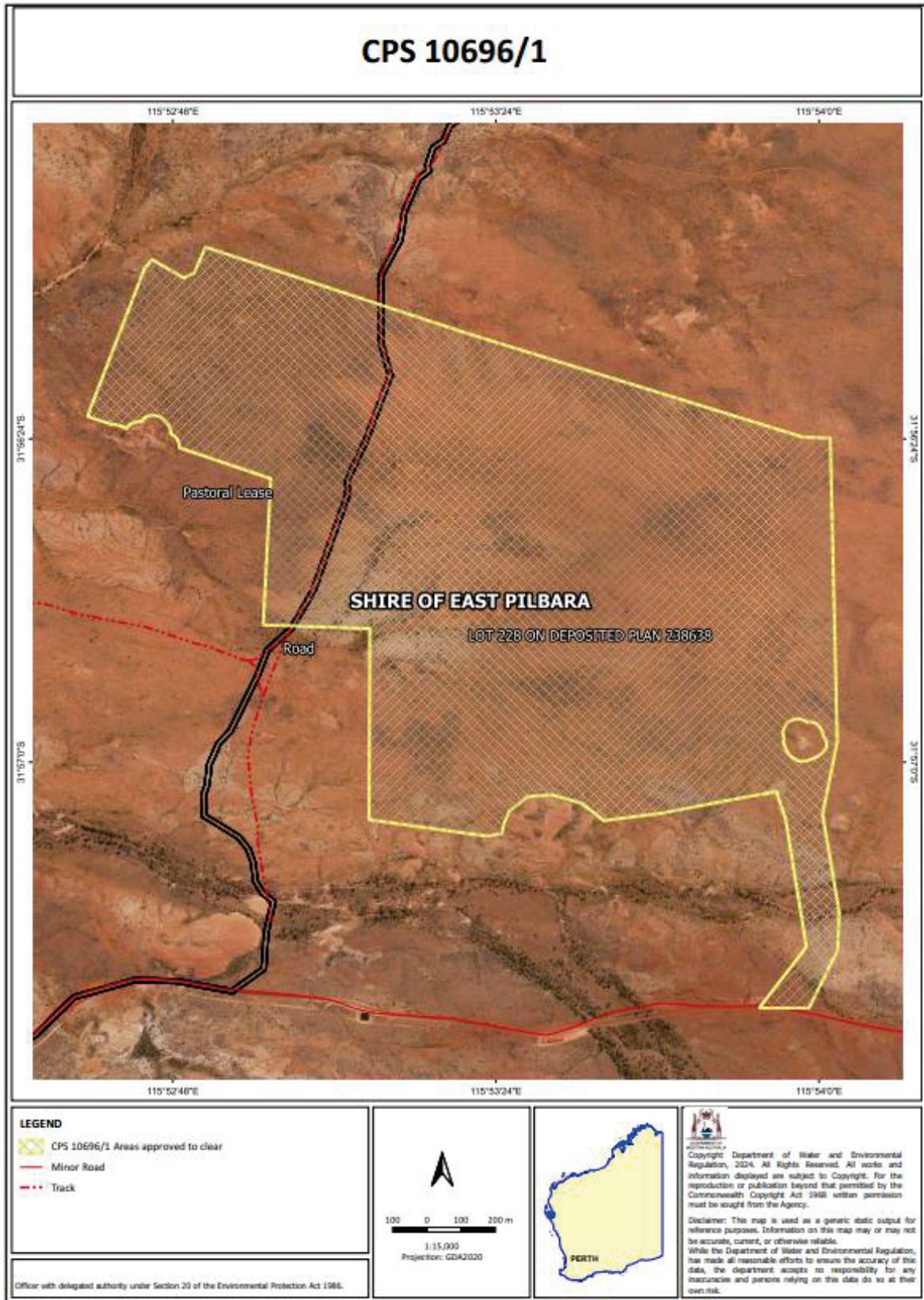


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10696/1
Permit type:	Purpose permit
Applicant name:	Pilgangoora Operations Pty Ltd
Application received:	22 July 2024
Application area:	140 hectares of native vegetation
Purpose of clearing:	Establishment of an accommodation camp
Method of clearing:	Mechanical removal
Property:	Miscellaneous Licence 45/760
Location (LGA area/s):	Shire of East Pilbara
Colloquial name:	Pilgangoora Lithium-Tantalum Project

1.2. Description of clearing activities

Pilgangoora Operations Pty Ltd proposes to clear up to 140 hectares of native vegetation within a boundary of approximately 484 hectares for the purpose of establishing a mining camp and associated infrastructure to support the continued operation of the Pilgangoora Lithium-Tantalum Project (see Figure 1, Section 1.5). The project is located approximately 70 kilometres south-southeast of Port Hedland, within the Shire of East Pilbara.

1.3. Decision on application

Decision:	Granted
Decision date:	20 December 2024
Decision area:	140 hectares of native vegetation as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix G), the findings of biological surveys, the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values
- impacts to conservation significant fauna and/or their habitat
- impacts to riparian vegetation and surface water flows

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds
- a watercourse management condition to avoid and minimise clearing riparian vegetation, and maintain existing surface water flow
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- identify the presence of termite mounds and, if clearing in the location of the termite mound(s) is required, safely relocate the mound(s) to maintain habitat values for *Liasis olivaceus barroni* (Pilbara olive python)
- identify the presence of *Macrotis lagotis* (greater bilby) burrows and cease clearing activities within the proximity of active burrows
- undertake appropriate surveys to identify the presence of *Pezoporus occidentalis* (night parrot) prior to the commencement of clearing and cease clearing until suitable management measures are identified and approval to continue clearing has been granted



Clearing Permit Decision Report

1.5. Site map

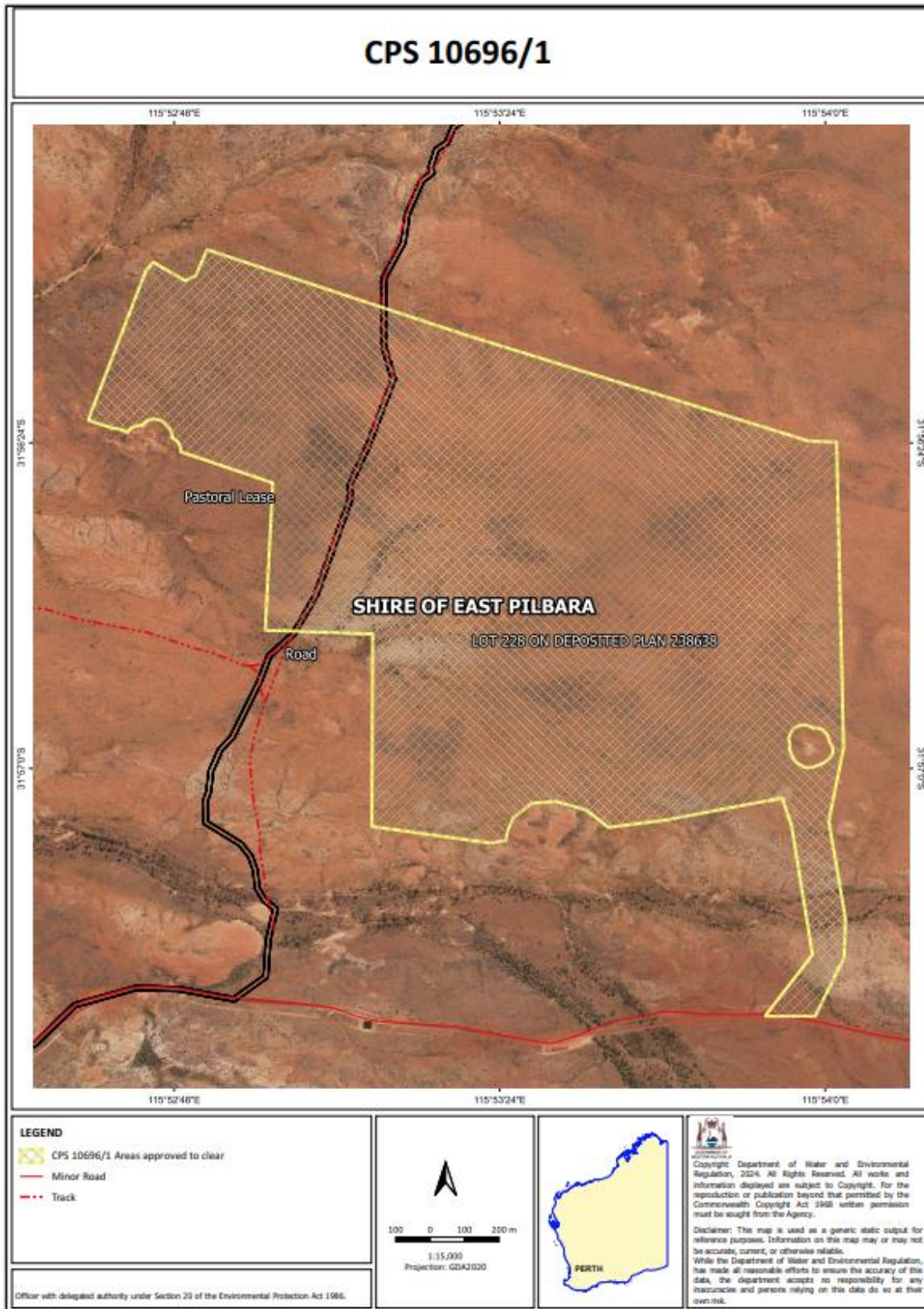


Figure 1 Map of the application area
The area crosshatched yellow indicates the area within which clearing can occur under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised that the application area was further removed from conservation significant fauna habitat and records than other alternative locations for the proposed mining camp. Due to the findings of a flora and fauna survey undertaken in 2024, the application area was amended to exclude the recorded locations of several threatened flora and fauna species and avoid clearing of and around these species.

The applicant has also proposed the following mitigation measures:

- site induction includes details on vegetation clearing protocols and the potential impacts of unauthorised clearing
- a Land Use Certificate system is in place and requires sign off by the Environmental Advisor prior to clearing being undertaken
- survey control will be utilised to set out the limits of areas to be cleared using survey pegs and flagging tape
- all site personnel will be made aware of the vegetation clearing procedure and permitting requirements
- all topsoil stripped will be retained for use in rehabilitation activities
- progressively rehabilitate areas no longer required as soon as practicable
- where seed is required, only native plant species of local provenance will be used
- to assist with ongoing review of the rehabilitation and impact assessment and environmental management at the site, the applicant will submit an annual environmental report to DEMIRS as required by tenement conditions.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biological values (flora and fauna). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

A fauna survey was undertaken over the application area in September and October 2023 by Animal Plant Mineral Pty Ltd (APM). Four fauna habitats were recorded within the application area (APM, 2024):

- spinifex open plains
- drainage line
- granite dome
- sandy basin.

Spinifex open plains habitat is typical for the Macroy land system that the application area is located within and is typically interspersed with granite domes and drainage lines (APM, 2024). The drainage line habitat contains some hollow logs large enough for *Dasyurus hallucatus* (northern quoll) and sand in the stream beds is suitable for burrowing species (APM, 2024). However; the location where the survey area crosses Chinnamon Creek is of lower habitat value than areas further downstream (Pilbara Minerals Limited, 2024).

Granite dome overhangs are sufficient to provide shelter for *Liasis olivaceus barroni* (Pilbara olive python) and non-breeding denning opportunities for *Dasyurus hallucatus* (northern quoll) but are insufficient for *Rhinonictoris aurantia* (Pilbara form) (Pilbara leaf-nosed bat) and *Macroderma gigas* (ghost bat). Following consultation with the department, the applicant agreed to remove the granite dome overhang from the application area.

Sand accumulation in the sandy basin habitat provides a deep soil profile suitable for burrowing and is suitable habitat for *Dasyercus blythi* (brush-tailed mulgara) (APM, 2024).

Two conservation significant fauna species were captured within the survey area on motion triggered cameras: *Liasis olivaceus barroni* (Pilbara olive python) and *Dasyercus blythi* (brush-tailed mulgara) (APM, 2024). Acoustic bat recording for *Rhinonictoris aurantia* (Pilbara form) (Pilbara leaf-nosed bat) and *Macroderma gigas* (ghost bat) was undertaken for a total of seven nights from one bat detector unit, however no calls from either species were recorded (APM, 2024).

Liasis olivaceus barroni (Pilbara olive python) is recorded frequently in the Pilgangoora area and prefers deep gorges and water holes in the ranges of the Pilbara region (APM, 2024, Pearson, 1993). The species was captured on camera within the application area exiting a large termite mound (APM, 2024). Termite mounds are not recognised as important habitat for the species, and this was considered to be a novel finding (APM, 2024). APM noted that five termite mounds were recorded within the survey area, and additional termite mounds were identified past the northeast corner of the survey area. The Department of Biodiversity, Conservation and Attractions (DBCA) advised that *Liasis olivaceus barroni* (Pilbara olive python) individuals are regularly recorded as sheltering in termite mounds and have been recorded as using them for a few days at a time (DBCA, 2024). As one of the main threats to *Liasis olivaceus barroni* (Pilbara olive python) is the destruction of habitat (Pearson, 2006), habitat values within the application area should be maintained. This can be achieved through the implementation of conditions that allow for the protection and relocation of termite mounds that may be impacted by the proposed clearing.

Dasyercus blythi (brush-tailed mulgara) is widespread but patchily distributed in sandy regions of arid central Australia and Western Australia (APM, 2024). It uses open space between vegetation, a microhabitat that is known to support important prey species and may forage in termite mounds (APM, 2024; Molyneux et al., 2018). A burrow complex was identified during the survey and the species was captured on camera on 12 occasions over a 26 day period. The applicant has excluded the burrow complex from the application area and it is therefore unlikely that the *Dasyercus blythi* (brush-tailed mulgara) will be significantly impacted by the proposed clearing.

The application area is within the area mapped by the DBCA as a high priority for *Pezoporus occidentalis* (night parrot) surveys. A desktop search indicated that there are no prior recording of *Pezoporus occidentalis* (night parrot) within a 30 kilometre radius of the application area (GIS Database). The applicant has undertaken passive acoustic surveys, which did not record the presence of the species (APM, 2022a; APM, 2022b; APM, 2023; Pilbara Minerals Limited, 2024). However, the study areas did not intersect with the application area and recording devices were only deployed for three to four nights (APM, 2022a, APM, 2022b, APM, 2023), less than the minimum recommended six nights (DBCA, 2024a). The majority of the application area (>98%) consists of *Triodia* grassland (APM, 2024), which is *Pezoporus occidentalis* (night parrot) habitat for roosting, nesting and is its preferred foraging habitat (DBCA, 2024a).

Macrotis lagotis (greater bilby) was not recorded within the application area during the fauna survey (APM, 2024), however the DBCA advised that it includes suitable habitat for the species and that there is a possibility of *Macrotis lagotis* (greater bilby) burrows being constructed prior to the commencement of clearing activities (DBCA, 2024a).

Suitable habitat for other threatened species was noted as occurring within the application area (outlined in C.3), however no evidence of these species being present within the application area was found during the fauna surveys (APM, 2024). These species are unlikely to be impacted by the proposed clearing.

Conclusion

Based on the above assessment, the proposed clearing may result in direct impacts to *Liasis olivaceus barroni* (Pilbara olive python), including unintentional mortality. There will also be a loss of suitable habitat for *Pezoporus occidentalis* (night parrot), and *Macrotis lagotis* (greater bilby) (APM, 2024; GIS Database).

For the reasons set out above, it is considered that the impacts of the proposed clearing can be managed by taking steps to undertake slow directional clearing to allow fauna to move into adjacent vegetation, protect habitat and habitat values where possible, and minimise the risk of fauna mortalities.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid, minimise and reduce impacts and extent of clearing
- directional clearing
- pre-clearance surveys to detect the presence of *Liasis olivaceus barroni* (Pilbara olive python), *Macrotis lagotis* (greater bilby), and *Pezoporus occidentalis* (night parrot) and allow for their relocation if present
- relocation of termite mounds away from clearing areas to maintain habitat values for *Liasis olivaceus barroni* (Pilbara olive python)

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Mining proposal approved under the *Mining Act 1978*
- Works approval and licence issued under Part V Division 3 of the EP Act
- Licence to construct or alter wells under the *Rights in Water and Irrigation Act 1914*
- Permit to interfere with bed and banks under the *Rights in Water and Irrigation Act 1914*.

It is the permit holder's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Energy, Mines, Industry Regulation and Safety to determine whether a works approval, water licence, bed and banks permit, or any other licences or approvals are required for the proposed works.

It is noted that the proposed clearing may impact on *Liasis olivaceus barroni* (Pilbara olive python), *Macrotis lagotis* (greater bilby), and *Pezoporus occidentalis* (night parrot), which are protected matters under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Climate Change, Environment and Water for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Climate Change, Energy, the Environment and Water and the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

End

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details																														
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is surrounded by large areas of uncleared land and mining operations.</p> <p>Spatial data indicates the local area (30 kilometre radius from the application area) retains approximately 99 per cent of the original native vegetation cover (GIS Database).</p>																														
Ecological linkage	The application area is not considered a significant ecological linkage. The vegetation immediately surrounding the application area and the majority of the region remains uncleared (GIS Database).																														
Conservation areas	The application area is not located within any conservation areas. The nearest legislated conservation area is Mungarooka Range Nature Reserve, located approximately 60-80 kilometres southwest of the application area (GIS Database).																														
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <ul style="list-style-type: none"> 93: Hummock grassland with scattered scrubs or mallee <i>Triodia</i> spp. <i>Acacia</i> spp., <i>Grevillea</i> spp., <i>Eucalyptus</i> spp 619: Riverine, river gum <i>Eucalyptus camaldulensis</i>. <p>A flora and vegetation survey was undertaken over the application area by APM. A total of five vegetation types were identified within the application area (APM, 2024):</p> <table border="1"> <thead> <tr> <th>Landform</th> <th>Type</th> <th>Description</th> <th>Area (ha)</th> <th>Area (% of survey area)</th> </tr> </thead> <tbody> <tr> <td>Sandy creek</td> <td>4b</td> <td>Low open woodland of <i>Eucalyptus victrix</i> over <i>Acacia bivenosa</i>, <i>Acacia trachycarpa</i> and <i>Acacia stellaticeps</i> tall open shrubland with <i>Triodia epactia</i>, <i>Triodia wiseana</i> and <i>Triodia secunda</i> hummock grassland.</td> <td>0.95</td> <td>0.2</td> </tr> <tr> <td>Drainage depression</td> <td>7b</td> <td>Low open woodland of <i>Corymbia hamersleyana</i> over <i>Acacia bivenosa</i>, <i>Acacia acredenia</i> and <i>Acacia inaequilatera</i> tall sparse shrubland with <i>Triodia wiseana</i>, <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland.</td> <td>8.90</td> <td>1.7</td> </tr> <tr> <td>Undulating plains</td> <td>12a</td> <td>Isolated low <i>Corymbia hamersleyana</i> and <i>Corymbia zygophylla</i> over <i>Acacia stellaticeps</i>, <i>Acacia inaequilatera</i> and <i>Acacia adsurgens</i> sparse mid shrubland with mid hummock grassland of <i>Triodia lanigera</i>, <i>Triodia wiseana</i> and <i>Triodia epactia</i>.</td> <td>493.16</td> <td>94.6</td> </tr> <tr> <td>Sandy basin</td> <td>16b</td> <td>Hummock grassland of <i>Triodia secunda</i> and <i>Triodia epactia</i> with open herbfield of <i>Pluchea tetranthera</i>, <i>Fimbristylis dichotoma</i> and <i>Eriachne ciliata</i>.</td> <td>15.93</td> <td>3.1</td> </tr> <tr> <td>-</td> <td>D</td> <td>Disturbed – clear of vegetation.</td> <td>2.45</td> <td>0.5</td> </tr> </tbody> </table>	Landform	Type	Description	Area (ha)	Area (% of survey area)	Sandy creek	4b	Low open woodland of <i>Eucalyptus victrix</i> over <i>Acacia bivenosa</i> , <i>Acacia trachycarpa</i> and <i>Acacia stellaticeps</i> tall open shrubland with <i>Triodia epactia</i> , <i>Triodia wiseana</i> and <i>Triodia secunda</i> hummock grassland.	0.95	0.2	Drainage depression	7b	Low open woodland of <i>Corymbia hamersleyana</i> over <i>Acacia bivenosa</i> , <i>Acacia acredenia</i> and <i>Acacia inaequilatera</i> tall sparse shrubland with <i>Triodia wiseana</i> , <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland.	8.90	1.7	Undulating plains	12a	Isolated low <i>Corymbia hamersleyana</i> and <i>Corymbia zygophylla</i> over <i>Acacia stellaticeps</i> , <i>Acacia inaequilatera</i> and <i>Acacia adsurgens</i> sparse mid shrubland with mid hummock grassland of <i>Triodia lanigera</i> , <i>Triodia wiseana</i> and <i>Triodia epactia</i> .	493.16	94.6	Sandy basin	16b	Hummock grassland of <i>Triodia secunda</i> and <i>Triodia epactia</i> with open herbfield of <i>Pluchea tetranthera</i> , <i>Fimbristylis dichotoma</i> and <i>Eriachne ciliata</i> .	15.93	3.1	-	D	Disturbed – clear of vegetation.	2.45	0.5
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-	D	Disturbed – clear of vegetation.	2.45	0.5																											
Vegetation condition	Surveys of the application area determined the vegetation to be in the following conditions (APM, 2024; Trudgen, 1991):																														

Characteristic	Details																
	<table border="1"> <thead> <tr> <th>Condition</th> <th>Description</th> <th>Area (ha)</th> <th>Area (%)</th> </tr> </thead> <tbody> <tr> <td>Very good</td> <td>Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.</td> <td>517.91</td> <td>99.3</td> </tr> <tr> <td>Good</td> <td>More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.</td> <td>0.95</td> <td>0.2</td> </tr> <tr> <td>Completely degraded</td> <td>Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.</td> <td>2.45</td> <td>0.5</td> </tr> </tbody> </table> <p>The full Trudgen (1991) condition rating scale is provided in Appendix E.</p>	Condition	Description	Area (ha)	Area (%)	Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.	517.91	99.3	Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.	0.95	0.2	Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.	2.45	0.5
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Climate and landform	The climate of the Chichester subregion of the Pilbara is described as semi-desert-tropical (Kendrick and McKenzie, 2001), and the area (Marble Bar, station ID 004106) receives an average of 379.8 millimetres (mm) of rainfall annually (Bureau of Meteorology, 2024).																
Soil description	<p>The soils and landforms within the application area are mapped as (DPIRD, 2024; Van Vreeswyk et al., 2004):</p> <table border="1"> <thead> <tr> <th>Land system</th> <th>Geology</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Macroy</td> <td>Level to gently undulating stony and gritty surfaced plains with occasional granite tor field and domes and closely to moderately spaced dendritic tributary drainage floors, relief up to 25 metres</td> <td>Stony plains and occasional tor fields based on granite supporting hard and soft spinifex grasslands</td> </tr> </tbody> </table>	Land system	Geology	Description	Macroy	Level to gently undulating stony and gritty surfaced plains with occasional granite tor field and domes and closely to moderately spaced dendritic tributary drainage floors, relief up to 25 metres	Stony plains and occasional tor fields based on granite supporting hard and soft spinifex grasslands										
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Land degradation risk	The Macroy land system is generally not susceptible to erosion (Van Vreeswyk et al., 2004). The drainage lines intersecting the application area may be prone to erosion if vegetation cover is removed.																
Waterbodies	The desktop assessment indicated that multiple minor non-perennial drainage lines intersect the application area. These drainage lines flow towards Chinnamon Creek, described as a minor non-perennial watercourse and located 2.7 kilometres west of the application area (GIS Database).																
Hydrogeography	<p>The application area is located within the Pilbara Surface Water Area and the Pilbara Groundwater Area, which are proclaimed under the <i>Rights in Water and Irrigation Act 1914</i>.</p> <p>The mapped groundwater salinity is 500-1000 total dissolved solids milligrams per litre, which is described as marginal water quality (GIS Database).</p>																
Flora	<p>There are records of 4 priority flora species within 30 kilometres of the application area, one of which is found on the same soil type as the application area (<i>Gymnanthera cunninghamii</i>) (GIS Database).</p> <p>Within the survey area, two Priority 3 species, <i>Triodia chichesterensis</i> and <i>Euploca mutica</i> were identified, and are located 50 metres from the application area (APM, 2024).</p>																

Characteristic	Details
Ecological communities	There are no known threatened or priority ecological communities mapped within the application area (GIS Database). The nearest known ecological community is the Gregory Land System priority ecological community (Priority 3), located approximately 22.7 kilometres southwest of the application area (GIS Database).
Fauna	There are records of 17 fauna species of conservation significance within 30 kilometres of the application area (GIS Database). One Priority 4 species, <i>Dasyercus blythi</i> (brush-tailed mulgara), was recorded in the survey area, and one vulnerable species, <i>Liasis olivaceus</i> subsp. <i>baronni</i> (Pilbara olive python), was recorded within the application area (APM, 2024).

C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Pilbara	17,808,657	17,733,584	~99	1,802,757	10.12
Vegetation complex – Beard vegetation association*					
93	3,042,114	3,038,472	~99	59,577	1.96
619	118,920	118,117	~99	236	0.20

*Government of Western Australia (2019)

C.3. Fauna analysis table

A database search returned the following conservation significant fauna species with records within a 30 kilometre radius of the application area.

Species name	Conservation status		Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
	WA	EPBC					
<i>Actitis hypoleucos</i> (common sandpiper)	MI	MI	N	N	8.1 km west	3	Y
<i>Anilius ganei</i> (Gane's blind snake (Pilbara))	P1		N	N	9.9 km east	3	Y
<i>Antichiropus</i> sp. DIP005 (Abydos antichiropus millipede)	P1		Y	Y	9.7 km east	4	N
<i>Apus pacificus</i> (fork-tailed swift)	MI	MI	Y	Y	8.8 km east	8	Y
<i>Charadrius veredrus</i> (oriental plover)	MI	MI	Y	Y	8.8 km east	2	Y
<i>Dasyercus blythi</i> (brush-tailed mulgara)	P4		Y	Y	50 m	38	Y
<i>Dasyurus hallucatus</i> (northern quoll)	EN	EN	Y	Y	6.3 km northwest	1042	Y
<i>Falco hypoleucos</i> (grey falcon)	VU		Y	Y	8.5 km west	6	Y
<i>Falco peregrinus</i> (peregrine falcon)	OS		Y	Y	8.8 km east	3	Y
<i>Hipposideros stenotis</i> (northern leaf-nosed bat)	P2		Y	Y	21.1 km southwest	5	Y
<i>Lagorchestes conspicillatus leichardti</i> (spectacled hare-wallaby (mainland))	P4		Y	Y	8.5 km east	142	Y
<i>Liasis olivaceus baronni</i> (Pilbara olive python)	VU	VU	Y	Y	0 km	11	Y
<i>Macroderma gigas</i> (ghost bat)	VU	VU	Y	Y	9.7 km northwest	103	Y
<i>Macrotis lagotis</i> (bilby, dalgyte, ninu)	VU	VU	Y	Y	6.3 km northwest	22	Y

Species name	Conservation status		Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
	WA	EPBC					
<i>Pseudomys chapmani</i> (western pebble-mound mouse, ngadji)	P4		N	N	3.7 km southwest	140	Y
<i>Rhinonictis aurantia</i> (Pilbara form) (Pilbara leaf-nosed bat)	VU	VU	Y	Y	8.6 km west	284	Y
<i>Sminthopsis longicaudata</i> (long-tailed dunnart)	P4		N	N	20.6 km southwest	1	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, MI: migratory, OS: other specially protected

Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain locally significant flora or assemblages of plants. The flora survey undertaken by APM identified two Priority 3 species within the survey area (APM, 2024). The locations of these species were removed from the application area, with an additional 50 metre buffer applied (Pilbara Minerals Limited, 2024).</p> <p>The area proposed to be cleared contains suitable habitat for several threatened fauna species and is likely to contain suitable habitat for other threatened fauna species (APM, 2024).</p>	May be at variance	Yes <i>Refer to Section 3.2.1 above.</i>
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains foraging and roosting habitat for conservation significant fauna.</p>	At variance	Yes <i>Refer to Section 3.2.1 above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act. The application area has been amended to avoid the clearing of two threatened flora species identified during a survey, with an additional 50 metres buffer applied (APM, 2024, Pilbara Minerals Limited, 2024).</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain species that can indicate a threatened ecological community (TEC). The nearest recorded TEC to the application area is located approximately 22.7 kilometres to the southwest (GIS Database).</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area occurs within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 99% of the pre-European vegetation remains (Government of Western Australia, 2019).</p> <p>The vegetation within the application area has been mapped as Beard vegetation associations 93: Hummock grassland with scattered scrubs or</p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>mallee <i>Triodia</i> spp. <i>Acacia</i> spp., <i>Grevillea</i> spp., <i>Eucalyptus</i> spp. and 619: Riverine, rivergum <i>Eucalyptus camaldulensis</i>.</p> <p>Approximately 99% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>Given the amount of vegetation remaining in the local area and bioregion, the vegetation proposed to be cleared is not considered to represent a remnant within an extensively cleared area.</p>		
<p><u>Principle (h):</u> “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.”</p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area is approximately 60-80 kilometres (GIS Database), the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> “Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</p> <p><u>Assessment:</u></p> <p>Several minor non-perennial drainage lines intersect the application area and flow towards Chinnamon Creek, located 2.7 kilometres west of the application area (GIS Database). The vegetation types identified during the survey were not noted as being groundwater dependent vegetation (APM, 2024).</p> <p>Potential impacts to riparian vegetation may be minimised by the implementation of a watercourse management condition.</p>	At variance	No
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u></p> <p>The application area is mapped within the Macroy land system which is generally not susceptible to erosion (Van Vreeswyk et al., 2004). Land degradation issues may occur near the drainage lines intersecting the application area if vegetation cover is removed.</p> <p>Potential erosion impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition and a watercourse management condition.</p>	May be at variance	No
<p><u>Principle (i):</u> “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.”</p> <p><u>Assessment:</u></p> <p>Given no permanent water courses, wetlands, or Public Drinking Water Sources Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u></p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding (GIS Database).</p> <p>Large rainfall events may result in isolated flooding of non-perennial watercourses, however this is considered typical of the region (Pilbara Minerals Limited, 2024).</p>		

Appendix E. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or ‘parkland cleared’ with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Photographs of the vegetation

Photos from the flora and vegetation survey undertaken by APM in 2023 (APM, 2024).



Photo 1: Sandy creek



Photo 2: Drainage depression



Photo 3: Undulating plains

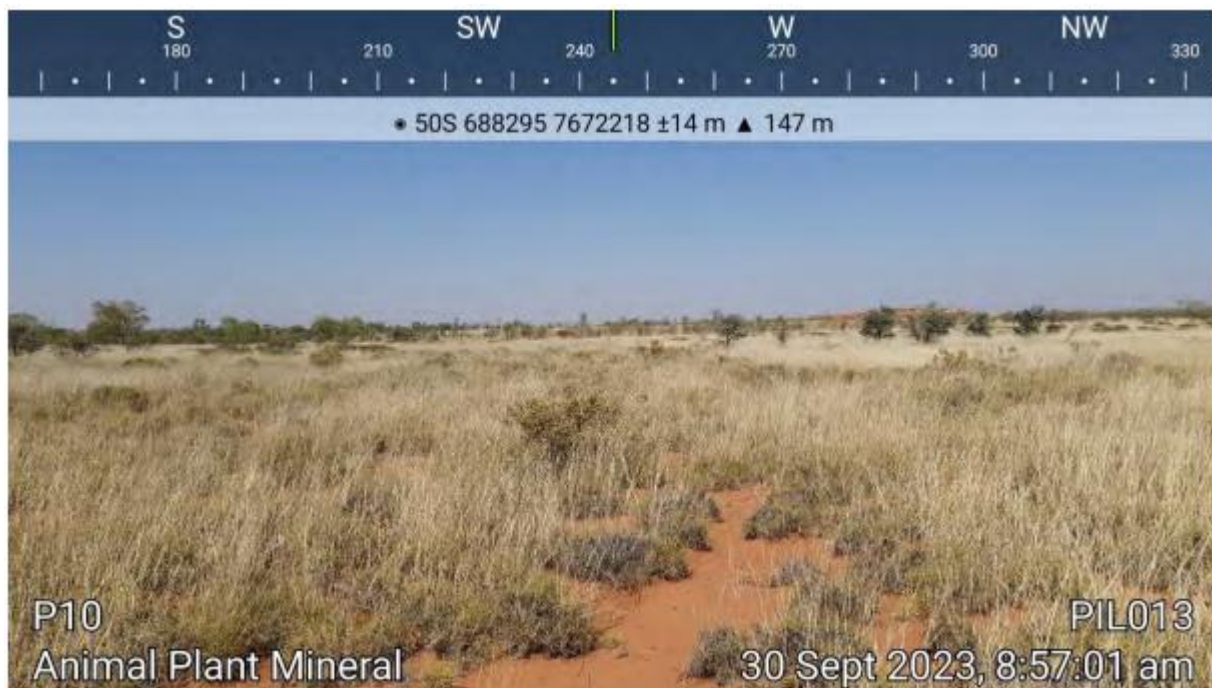


Photo 4: Sandy basin

Appendix G. Sources of information

G.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Clearing Regulations- Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)

- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Systems (DPIRD-064)

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

G.2. References

- Animal Plant Mineral Pty Ltd (2022a) *Lynas Find Biological Survey*, Ellenbrook, Western Australia.
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