GOVERNMENT OF WESTERN AUSTRALIA

Department of Water and Environmental Regulation
Department of Mines, Industry Regulation and Safety

Applications for a clearing permit to be assessed under a Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Accredited Process

Environmental Protection Act 1986, section 51E and section 51M

Assessment bilateral agreement - Annex C7

The native vegetation clearing permit processes under Part V of the *Environmental Protection Act 1986* (EP Act) have been accredited by the Commonwealth under the EPBC Act and can be assessed under an assessment bilateral agreement.

CPS No.
Date stamp

Part 1: Area permit to be transferred

To be assessed under the assessment bilateral agreement, the proposed clearing action must have been referred to the Commonwealth and determined to be a 'controlled action' under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) prior to submitting this *Form Annex C7* as an attachment to a clearing permit application form (*Form C1, Form C2 of Form C4*).

EPBC Act number	2018/8270
Short name of the project	Quarry project, Banksia Road, Dardanup

Provide a short description that uniquely identifies the proposed action and its location.

Clearing of 26.4 ha of vegetation for sand and gravel extraction at Lots 81 and 2 Banksia Road, Crooked Brook

Part 2: Proposed clearing action and impact assessment details

Where the proposed clearing action has been determined to be a controlled action by the Commonwealth Minister for the Environment, assessment of the clearing action under the assessment bilateral agreement can occur if the identified information (see right) is provided and attached to this Annex and the clearing permit application form.

Please tick the boxes to indicate the information has been attached.

☒	Description of the proposed clearing action
☒	Detailed descriptions (including surveys, reports, and methodologies) of the matter(s) of national environmental significance (NES) prescribed through the EPBC Act controlled action decision and any other relevant matters.
☐	World heritage property Specify:
☐	National heritage property Specify:
☐	Wetlands of national importance (Ramsar wetlands) Specify:
☒	Nationally listed threatened species and ecological communities including suitable habitat Specify: Baudin's black-cockatoo (Calyptorhynchus baudinii), Carnaby's black cockatoo (Calyptorhynchus latirostris) and the forest red-tailed black-cockatoo (Calyptorhynchus banksii naso)
☐	Listed migratory species including suitable habitat Specify:
	Commonwealth marine

Part 2: Proposed clearing action and impact assessment details		
	☐	Specify:
	☒	The likely relevant impacts of the action on matters of NES prescribed through the EPBC Act controlled action decision, such as: • a description of the relevant impacts, including environmental, social, and economic impacts; • a detailed analysis of the nature and extent of the likely direct, indirect, short- or long-term impacts; • a statement regarding whether any relevant impacts are likely to be unknown, unpredictable, or irreversible; and/or • technical data and other information used to make the detailed assessment.
	☒	Feasible alternatives to the proposed action, such as: • the alternative of taking no action; • a comparative description of the impacts of each alternative; • sufficient detail to make clear why any alternative is preferred to another; and • why the preferred alternative measure was not chosen in the first instance.
	☒	Detailed description and cost details of possible mitigation measures such as: • avoidance and mitigation measures proposed to be undertaken to prevent or minimise the relevant impacts of the actions on any matter of NES; • a detailed outline of a plan for the continuing management, mitigation, and monitoring of relevant impacts of the action on any matters of NES; • details of any significant residual impacts on matters of NES; and • an analysis of how the offset package meets the requirement of the EPBC Act Offsets Policy.
	☒	Sources of information and references

Part 3: Consultation		
Public consultation with direct interest stakeholders is a statutory requirement for new clearing permit applications under s.51E of the EP Act. Applications for amendments under s.51M may be advertised for public consultation, as determined on a case-by-case basis.	☐	The role and interests of Indigenous peoples, as applicable, in promoting conservation and ecologically sustainable use of natural resources, and their knowledge of biodiversity and heritage, have been taken into consideration. Information relating to these matters has been attached.
	☒	After the CEO has determined that the permit application is validly made under section 51E of the EP Act, the application will be advertised for public comment. It is acknowledged that the applicant will be provided with submissions made by the public during the public comment period and must prepare and submit to the CEO a written response which addresses or takes into account the issues raised by the public in those submissions.

Part 4: Further information	
For further information contact DWER or DMIRS (as applicable) at the details below.	
Department of Water and Environmental Regulation: Email: info@dwer.wa.gov.au Telephone: 6364 7000 For more information: www.dwer.wa.gov.au	Department of Mines, Industry Regulation and Safety: Email: nvab@dmirs.wa.gov.au Telephone: 9222 3333 For more information: www.dmirs.wa.gov.au
Please retain a copy of this form for your records. Incomplete applications will be returned.	

Part 4: Further information
If there is insufficient space on any part of this form, please continue on a separate sheet of paper and attach to this form

Title of Proposal - Lot 81 and Lot 2 Banksia Road, Dardanup

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Waste Management (non-sewerage)

1.2 Provide a detailed description of the proposed action, including all proposed activities.

J and P Group Pty Ltd (the proponent) are proposing to clear 20 hectares (ha) on Lot 81 on Plan 403943 Banksia Road, Crooked Brook (herein referred to as Lot 81) and 7.4 ha on Lot 2 on Diagram 65861 Banksia Road, Crooked Brook (herein referred to as Lot 2).

Within Lot 81, the proposed clearing is required to enable development for a sand and gravel extraction operation. Upon completion of the extraction operation, the pit will subsequently be used as landfill cells (as per the current zoning).

Within Lot 2, the clearing is required to:
- Enable the expansion of the current Class III putrescible landfill operation;
- Achieve optimum utilisation of airspace and remain a best practice operated landfill for a longer term to service the community; and
- Utilise in-situ soil for use as landfill daily cover.

Lot 81 and Lot 2 are zoned “Rural” under the Greater Bunbury Region Scheme and “General Farming” pursuant to the Town Planning Scheme (TPS) No. 3. In accordance with the Shire of Dardanup’s Local Planning Strategy, Lot 81 and Lot 2 are zoned ‘Waste Disposal/Processing’. Currently, Lot 2 is operated as a waste facility to meet the waste needs of the Southwest region.

The vegetation present within the proposed clearing footprints in Lot 81 and Lot 2 is dominated by jarrah (Eucalyptus marginata) and to a lesser extent marri (Corymbia calophylla) and mountain marrI (Corymbia haematoxylon), and due to historical clearing and ongoing livestock grazing, associated midstorey species are generally sparse. Much of the vegetation appears to be regrowth from historical clearing/logging. Midstorey species that are present in small numbers include bull banksia (Banksia grandis), snottygobble (Persoonia longifolia), Christmas tree (Nuytsia foribunda) and woody pear (Xylomelum occidentalis).

A black cockatoo (Baudin’s black-cockatoo (Calyptorhynchus baudinii), Carnaby’s black-cockatoo (Calyptorhynchus latirostris) and the forest red-tailed black-cockatoo (Calyptorhynchus banksii naso)) assessment (Harewood 2015 and Astron 2014) was undertaken whereby it was identified that the vegetation present within Lot 81 and Lot 2 contains potential black cockatoo breeding habitat in addition to identified foraging and roosting habitat.

A 50m buffer between Lot 81 and Lot 2 and the Dardanup Conservation Park will be established with native vegetation. Vegetation within this buffer will be retained and enhanced to provide foraging and breeding habitat for black cockatoos in perpetuity. It is also proposed to protect 50 ha of native vegetation in a very good condition within proposed offset sites.

In summary, the proposed action will involve the following:
- Clearing of 27.4 ha of potential black cockatoo breeding, foraging and roosting habitat;
- Retention of 8.3 ha of black cockatoo foraging and breeding habitat within the vegetation buffer; and
- Protection of 49 ha of native vegetation at two offset sites in proximity to the clearing footprints.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Clearing footprint	1	-33.420875553875	115.79080685936
Clearing footprint	2	-33.420911373041	115.79840287529
Clearing footprint	3	-33.422397855411	115.79853162132
Clearing footprint	4	-33.422684403304	115.79634293876
Clearing footprint	5	-33.422039669216	115.79383239113
Clearing footprint	6	-33.421735209788	115.79258784614
Clearing footprint	7	-33.421699390961	115.79132184349
Clearing footprint	8	-33.420857644286	115.7908497747
Clearing footprint	9	-33.420875553875	115.79080685936
Clearing footprint	1	-33.423024677698	115.79838141762
Clearing footprint	2	-33.424009675004	115.79838141762
Clearing footprint	3	-33.424188764223	115.79471215568
Clearing footprint	4	-33.424511123885	115.79333886467
Clearing footprint	5	-33.42452903272	115.79185828529
Clearing footprint	6	-33.424009675004	115.7910858091
Clearing footprint	7	-33.423347041683	115.79104289375
Clearing footprint	8	-33.423024677698	115.790699571
Clearing footprint	9	-33.422344127576	115.79099997841
Clearing footprint	10	-33.422773949326	115.79473361336
Clearing footprint	11	-33.423400768897	115.79642876945
Clearing footprint	12	-33.423006768552	115.79842433296
Clearing footprint	13	-33.423024677698	115.79838141762
Clearing footprint	1	-33.425874353609	115.79643770102
Clearing footprint	2	-33.425820627926	115.79841180686
Clearing footprint	3	-33.430046946791	115.79839034918

Area	Point	Latitude	Longitude
Clearing footprint	4	-33.42995740827	115.79626603965
Clearing footprint	5	-33.428775491146	115.79716726187
Clearing footprint	6	-33.428274066898	115.79635187033
Clearing footprint	7	-33.427772639753	115.79656644705
Clearing footprint	8	-33.427468200431	115.79633041266
Clearing footprint	9	-33.426769776774	115.7967595661
Clearing footprint	10	-33.425874353609	115.79645915869
Clearing footprint	11	-33.425874353609	115.79643770102

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

Lot 81 and Lot 2 are located in the municipality of the Shire of Dardanup, approximately 4.5km south-east of Dardanup and approximately 16 km south-east of Bunbury. The Lots are comprised of paddocks, landfill cells and vegetated areas. The Lots are surrounded by the Dardanup Conservation Park and rural properties.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

27.4 hectares

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lot 81 on Plan 403943 and Lot 2 on Diagram 65861

1.8 Primary Jurisdiction.

Western Australia

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

Yes

1.10.1 Is there a local government area and council contact for the proposal?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 11/2018

End date 04/2019

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Within Lot 2, the need to provide additional landfill cells is predicated on the diminishing landfill capacity of the Banksia Road Putrescible landfill which is the one of two Class III landfills servicing the Perth Metropolitan area and the only one in southwest of Western Australia.

Lot 81 and Lot 2 are zoned “Rural” under the Greater Bunbury Region Scheme and “General Farming” pursuant to the Town Planning Scheme (TPS) No. 3. In accordance with the Shire of Dardanup’s Local Planning Strategy, Lot 81 and Lot 2 are zoned ‘Waste Disposal/Processing’. Currently, Lot 2 is operated as a waste facility to meet the waste needs of the southwest region.

For Lot 81, a Planning Application and Extractive Industry License will be submitted to the Shire of Dardanup to enable the extractive industry to proceed. Once received, the Shire will refer the aplications to the relevant State agencies for comment. It will also be necessary to obtain the relevant approvals from the Department of Water and Environmental Regulation (DWER) to construct and operate the proposed landfill cells.

The approval and related conditions will provide the management framework and required management plans for the proposal implementation.

Pursuant to Section 51E of the Environmental Protection Act 1986 (EP Act), a clearing permit administered by the DWER will also be required to enable the proposed clearing. A clearing permit application will be submitted to the DWER once a determination has been made regarding the EPBC Act referral.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Initial consultation has been undertaken with the Shire of Dardanup who have indicated support for the proposed extractive industry application and the proposed landfill. No further public consultation has been undertaken.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

No environmental impact assessments have been carried out under Commonwealth or State legislation and no approvals are in place for the proposed action.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Calyptorhynchus banksii naso Forest red-tailed	Loss of 27.4 ha of potential breeding and

Species	Impact
black-cockatoo	foraging habitat. Refer to Threatened Species Attachment for additional information.
Calyptorhynchus baudinii Baudin's black-cockatoo	Loss of 27.4 ha of potential breeding and foraging habitat. Refer to Threatened Species Attachment for additional information.
Calyptorhynchus latirostris Carnaby's black-cockatoo	Loss of 27.4 ha of potential breeding and foraging habitat. Refer to Threatened Species Attachment for additional information.

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

Species	Impact
Merops ornatus Rainbow bee-eater	Loss of 27.4 ha of habitat.

2.5.2 Do you consider this impact to be significant?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The clearing footprints contain jarrah-marri vegetation which is similar in composition and are contiguous with the adjacent Dardanup Conservation Park, though more degraded in condition. The vegetation within the clearing footprints can generally be described as a Low Open Woodland of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over *Xanthorrhoea preissii, Hakea lissocarpha* Open Shrubland over an Open Sedgeland on lateritic loam.

While a site specific flora and vegetation survey has not been undertaken within Lot 81, a level 2 flora and vegetation survey (Ecoedge 2014) has been undertaken within Lot 4580 Panizza Road which adjoins the northern boundary of Lot 81. A flora and vegetation survey has been undertaken within Lot 2 (Astron 2014). During the surveys, no flora or vegetation communities of conservation signficance were identified.

The fauna survey undertaken within Lot 81 resulted in the identification of 26 native fauna species (observed or positively identified from foraging evidence, scats, tracks, skeletons or calls). Evidence of two introduced species was also noted (Harewood 2015). The fauna survey within Lot 2 resulted in the identification of 25 native fauna species through direct observation or indirect evidence. One reptile species, 22 bird species (including four conservation significant species) and two mammal species were identified either by sight or indirect evidence, such as scats, tracks and traces (Astron 2014).

3.2 Describe the hydrology relevant to the project area (including water flows).

The principal groundwater aquifers for Lot 81 and Lot 2 include the Superficial, the Leederville and the Yarragadee aquifers.

The Superficial aquifer comprises clayey sediments of the Quaternary and Yoganup/Guildford Formations that form a protective barrier over the deeper and confined Leederville Formation which contained high quality groundwater. Within the clearing footprint there is approximately a 30m separation to the Leederville Formation with minimal to no groundwater in the clayey aquifer of the Guildford and Yoganup aquifers.

The clearing footprints are located in the Ferguson River catchment, in proximity to the boundary of the Crooked Brook catchment. Runoff from the scarp generally heads west to a depression, then north towards the Ferguson River.

No surface water features or wetlands are contained within the clearing footprints.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Lot 81 and Lot 2 are located on the footslopes of the Darling Scarp on the Swan Coastal Plain. It overlies Achaean granite and metamorphic rocks and has an average elevation of about 300 metres (m). The plateau is an ancient erosion surface capped by an extensive lateritic duricrust, which has been dissected by later drainage. The plateau is occasionally broken by prominent granite hills of unusual elevation. The dominant soils are lateritic gravels consisting of up to 5 m or more of ironstone gravels in a yellow sandy matrix, and related lateritic podzolic soils with ironstone gravels in a sandy surface horizon overlying mottled yellow-brown clay subsoil. Some granite boulders may protrude through the laterite mantle and hard-setting loamy soils to deep loams can be found within valleys (Beard 1990).

Heddle *et al.* (1980) mapped and defined the vegetation complexes on the Swan Coastal Plain and Mattiske and Havel (1998) revised and mapped the vegetation complexes on the adjacent Darling Scarp and Plateau for the purposes of the Regional Forest Agreement. Both the Heddle *et al.* (1980) and Mattiske and Havel (1998) classification systems emphasised the relationships between underlying geology and plant communities and utilised the concept of vegetation complexes. The clearing footprint is mapped as occurring within the following vegetation complexes:

-Whicher Scarp (WC): Open forest of *Eucalyptus marginata* subsp. *marginata - Corymbia calophylla* on escarpment with some *Corymbia haematoxylon, Banksia attenuata* and *Xylomelum occidentale* in the humid zone;

-Kingia (KL): Open forest of *Eucalyptus marginata* subsp. *marginata - Corymbia calophylla - Allocasuarina fraseriana - Banksia grandis - Xylomelum occidentale* on lateritic uplands in perhumid and humid zones; and

-Jalbaragup (JL): Open forest of *Eucalyptus marginata* subsp. *marginata - Corymbia calophylla - Eucalyptus patens* on slopes with some *Eucalyptus rudis* on broad terraces on perhumid and humid zones.

The vegetation present within the clearing area is dominated by jarrah (*Eucalyptus marginata*) and to a lesser extent marri (*Corymbia calophylla*) and mountain marri (*Coymbia haematoxylon*) and due to historical clearing and ongoing livestock grazing, associated midstorey species are generally sparse. Much of the vegetation appears to be regrowth from historical clearing/logging. Midstorey species that are present in small numbers include bull banksia (*Banksia grandis*), snottygobble (*Persoonia longifolia*), Christmas tree (*Nuytsia foribunda*) and woody pear (*Xylomelum occidentalis*) (Harewood 2015).

A level 2 flora and vegetation survey (Ecoedge 2014) undertaken within the adjacent property to Lot 81 did not identify any TECs or PECs within similar vegetation complexes as identified within the clearing area. Due to the history of anthropogenic disturbances, many understorey species are no longer present and therefore plant communities that may have been included

within the clearing area are no longer recognisable due to species loss. It is therefore considered unlikely that the clearing area contains vegetation communities of conservation significance. Furthermore, the flora and vegetation survey undertaken within Lot 2 (Astron 2014) did not identify any TECs, PECs or conservation significant flora.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The clearing footprints do not contain any outstanding natural features or any other important or unique values.

3.5 Describe the status of native vegetation relevant to the project area.

The mapped vegetation complex can be used to determine vegetation extent and status on the Swan Coastal Plain. The Environmental Protection Authority (EPA) recognises vegetation associations that are not well represented in reserves as being 'significant'. Vegetation complexes which have 10%-30% of their pre- European extent remaining may be considered regionally significant. Proposals that would impact on a vegetation complex with 10% or less remaining may be formally assessed by the EPA, depending on the condition of vegetation subject to disturbance (EPA 2006). The vegetation extents remaining in the Shire of Dardanup are provided below:

- Whicher Scarp - 32% of pre-European extent remaining;

- Kingia - 82% of pre-European extent remaining; and

- Jalbaragup - 75% of pre-European extent remaining.

As indicated above, the vegetation complexes retain in excess of the EPA supported threshold level (30%) recommended in the National Objectives Targets for Biodiversity Conservation (EPA 2000) and therefore the vegetation is not considered regionally significant.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The natural topography of the clearing footprints can be described as undulating with the elevation ranging from 76 metres (m) Australia Height Datum (AHD) to 115m AHD.

3.7 Describe the current condition of the environment relevant to the project area.

The majority of the Lots have previously been cleared for agricultural uses and a waste facility. The native vegetation has been impacted by these historical land uses as previously discussed.

Vegetation condition in the clearing footprints ranges from ‘degraded’ to ‘very good to excellent’ and ‘very good’ for the majority of the vegetated area. In general though, the remnant vegetation is a fine mosaic of varying condition with timber harvesting, clearing tracks and previous clearing impacting on the vegetation quality and integrity. The historic impact of fire frequency, logging and tracks has simplified species diversity in comparison to the adjacent Dardanup Conservation Park.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

No Commonwealth Heritage Places or other places are located in Lot 81 or Lot 2.

3.9 Describe any Indigenous heritage values relevant to the project area.

An online search for relevant Aboriginal heritage information was undertaken using the Department of Aboriginal Affairs (DAA) Aboriginal Inquiry System that incorporates both the heritage site register and the heritage survey database (DAA 2017).

Results of the DAA database search revealed that no Aboriginal heritage sites are present within the clearing footprints. Nonetheless, it is important to note that Aboriginal heritage sites may still exist in or adjacent to the clearing footprints that are not yet known to DAA, or may not yet be listed on the Aboriginal Heritage Register.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

Lot 81 and Lot 2 is held in freehold title.

3.11 Describe any existing or any proposed uses relevant to the project area.

Within Lot 81, the proposed clearing is required to enable development for a sand and gravel extraction operation. Upon completion of the extraction operation, the pit will subsequently be used as landfill cells (as per the current zoning).

Within Lot 2, the clearing is required to:

· Enable the expansion of the current Class III putrescible landfill operation;

· Achieve optimum utilisation of airspace and remain a best practice operated landfill for a longer term to service the community; and

· Utilise in-situ soil for use as landfill daily cover.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

The proponent has considered alternative locations for the proposed landfills within Lot 81 and Lot 2. However, given the topographic relief in certain areas, and proximity to groundwater in the western portions of the sites, the proposed locations are considered the only feasible locations. Locating the landfill cells towards the east of the Lots is considered best practice due to sustainable use of in-situ soil and lower risk of environmental impacts due to the depth to groundwater table being approximately 20m below base of expanded landfill. The material balance needed to excavate and cover the landfill would not be available if the landfill was expanded to the west instead of to the east as proposed. There are no opportunities to locate the landfill at another site due to zoning, amenity and environmental issues.

To avoid any potential impacts to the adjacent Dardanup Conservation Park from the proposed action, a 50m buffer of vegetation will be established from the internal firebreak within each Lot. This will involve the application of a conservation covenant over the vegetation to enable protection in perpetuity.

In order to reduce the impacts from the proposed action, a series of management plans will be implemented as described below.

<u>Flora and Vegetation Management</u>

The management objectives for vegetation and flora are:

· Restrict vegetation clearing to a practical minimum;

· Prevent unauthorised clearing of native vegetation outside of the clearing footprint; and

· Minimise disturbance to remaining vegetation to retain health and integrity.

Management actions to minimise disturbance to vegetation include:

· Peg/flag areas to be cleared to avoid any unnecessary disturbance to adjacent

vegetation;

· Create strategic firebreaks where necessary; and

· Restrict vehicle movement to designated access tracks, to prevent vegetation damage and erosion.

Fauna Management

The proposed management actions to mitigate potential impacts to fauna include:

· Plan clearing such that it does not result in the creation of isolated remnants of native vegetation that have no ecological corridors to allow fauna movement to adjacent areas;

· Restrict all vehicle use to designated roads and access tracks;

· Enforce compliance with onsite speed limits at all times;

· General housekeeping procedures such as litter removal at the perimeter of the Lots will be maintained to discourage fauna from entering the site from the adjacent Dardanup Conservation Park;

· Investigate methods for removing European honey bee hives from the clearing footprint;

· During clearing, a qualified fauna expert will be present to direct clearing operators, particularly when clearing trees that are occupied by fauna, to ensure that these are cleared in a way that allows the animals to safely mobilise to adjacent areas. In addition, they will supervise any animal handling and the rescue of injured animals should this be required;

· No stockpiling of topsoil or other material is to occur outside of the clearing boundary;

· If clearing during black cockatoo breeding season (i.e. August to May), check potential habitat trees (i.e. DBH in excess of 50 cm) for nesting hollows; and

· If active black cockatoo nests are located in the clearing footprint, do not clear until fledglings have left the nest.

Weed and Pathogen Management

The proposed management actions to mitigate potential impacts associated with weeds and pathogens include:

· All earthmoving and ground engaging equipment will be inspected and cleaned of vegetation, mud and soil prior to entry and exit of the impact area.

In addition to the proposed management measures, within Lot 81, the 20 ha will be cleared progressively over approximately five years. Subsequently, the 20 ha will not be cleared as a

single exercise but rather at an approximate rate of four hectares per annum. For both Lots, clearing will commence in a west to east direction, which will enable fauna to naturally disperse into the adjoining Dardanup Conservation Park.

Based on the above, the proposed clearing is unlikely to impact on the persistence of the species', however the action will result in a residual impact of clearing 27.4 ha of black cockatoo habitat.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The environmental impacts for matters protected by the EPBC Act will be:

1. The direct loss of 27.4 ha of foraging and potential breeding habitat for black cockatoos.

In order to offset the impacts to black cockatoo habitat as a result of the proposed action, the following offsets are proposed (refer to Offset Proposal Attachment):

· Direct Offset 1: Conservation in perpetuity of 11 ha of non-secure remnant native vegetation within Lot 10 Temple Road, East Picton (Lot on Survey P070159 10);

· Direct Offset 2: Conservation in perpetuity of 38 ha of non-secure remnant native vegetation in Lot 2148 Ferguson Road, Ferguson; and

· Direct Offset 3: Retention of 8.3 ha of black cockatoo foraging, roosting and breeding habitat within the vegetation buffer.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

The proposed action is considered likely to have an impact on black cockatoos.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Yes, the proponent has no history of breaching any environmental approval conditions or environmental legislation.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Not applicable

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

No

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Harewood 2015. Fauna Assessment – Lot 1 Banksia Road, Dardanup. Unpublished.	Zoologist with in excess of 25 years' of experience.	None.
Astron 2014, Banksia Road Dardanup Level 2 Vegetation and Flora Survey and Level 1 Fauna Assessment Unpublished.	Long established consultancy with over 30 years' experience.	None.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

There are no feasible alternatives given that the existing landfill has reached capacity. All other alternatives have been considered.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Individual

9.1 Individual

9.1.1 Job Title

Director

9.1.2 First Name

Jim

9.1.3 Last Name

Zheng

9.1.4 E-mail

jim.z@jpgroup.com.au

9.1.5 Postal Address

Short Street
Picton WA 6229
Australia

9.1.6 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Individual

Person proposing the action - Declaration

I, _____, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and

correct. I understand that giving false or misleading information is a serious offence.

Signature:…… Date: ……

I, _____, the person proposing the action, consent to the designation of _____ as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:…… Date: ……

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Individual

9.4 Individual

9.4.1 Job Title

Director

9.4.2 First Name

Sebastian

9.4.3 Last Name

Bolhuis

9.4.4 E-mail

SebastianB@HarleyDykstra.com.au

Proposed designated proponent - Declaration

I, _____, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:…… Date: ……

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Consultant

9.8.2 First Name

Kirsten

9.8.3 Last Name

Muir-Thompson

9.8.4 E-mail

kirsten@accendoaustralia.com.au

9.8.5 Postal Address

PO Box 5178
West Busselton WA 6280
Australia

9.8.6 ABN/ACN

ABN

11160028642 - ACCENDO AUSTRALIA PTY LTD

9.8.7 Organisation Telephone

0418 950 852

9.8.8 Organisation E-mail

kirsten@accendoaustralia.com.au

Referring Party - Declaration

I, _____, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:…… Date: ……

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 20464-03c_vegetation_plan.pdf
2. 201411_in_-_vegetation_flora_and_fauna_assessment_part1.pdf
3. 201411_in_-_vegetation_flora_and_fauna_assessment_part2.pdf
4. banksia_road_fauna_assessment_report_v1a.pdf
5. harley_trust_deed_1984.pdf
6. jpc_name_change.pdf
7. p1738_offset_proposal_v2_part1.pdf
8. p1738_offset_proposal_v2_part2.pdf
9. p1738_offset_proposal_v2_part3.pdf
10. p1738_offset_proposal_v2_part4.pdf
11. p1738_offset_proposal_v2_part5.pdf
12. p1738_offset_proposal_v2_part6.pdf
13. p1738_offset_proposal_v2_part7.pdf
14. threatened_species.pdf
15. trust_deed_jp_metals_unit_trust.pdf

Threatened Species

A search of the Department of the Environment and Energy's online 'EPBC Act Protected Matters Report' search tool identified a total of 29 threatened species as potentially occurring within Lots 81 and 2. **Table 1** lists the identified threatened species and their probability of occurring within the clearing footprint. Please note that the likelihood of occurrence and potential impact is based on the results of a technical environmental investigation (Harewood 2015 and Astron 2014).

Table 1. EPBC Act listed species and their likelihood to occur within the clearing footprint.

Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Potential Impact
Birds				
Apus pacificus *Fork-tailed swift*	Migratory	Marginal	Unlikely	No, this species is a seasonal vagrant that occurs throughout Australia.
Botaurus poiciloptilus Australasian bittern	Endangered	No	Unlikely	No, no suitable habitat present.
Ardea modesta Eastern great egret	Migratory	No	Unlikely	No, no suitable habitat present.
Ardea ibis Cattle egret	Migratory	No	Unlikely	No, no suitable habitat available.
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo	Vulnerable	Yes	Known to occur	Yes, loss of potential breeding and foraging habitat
Calyptorhynchus baudinii Baudin's Black-Cockatoo	Vulnerable	Yes	Known to occur	Yes, loss of potential breeding and foraging habitat
Calyptorhynchus latirostris Carnaby's Black-Cockatoo	Endangered	Yes	Known to occur	Yes, loss of potential breeding and foraging habitat
Haliaeetus leucogaster White-bellied sea-eagle	Migratory	No	Unlikely	No, no suitable habitat present.
Merops ornatus Rainbow bee-eater	Migratory	Yes	Known to occur	Yes, loss of some habitat. This species was heard during the fauna survey and is considered to potentially occupy the site at intermittent times and/or seasonally however it is unlikely to rely on the site for survival as the species has a very large range and is highly mobile.
Mammals				
Dasyurus geoffroii Chuditch	Vulnerable	No	Unlikely	No, this species is likely to persist in the larger state forest and reserve areas nearby (e.g. Dardanup Conservation Park) and therefore individuals may on infrequent occasions visit the clearing footprints, though they are unlikely to be specifically attracted to it (Harewood 2015). No evidence of

				this species occurring within the clearing footprint was recorded (Harewood 2015 and Astron 2014).
Myrmecobius fasciatus Numbat	Vulnerable	Yes	Unlikely	Locally extinct on the Swan Coastal Plain; currently two isolated native populations at Dryandra and Perup, southwest Western Australia.
Pseudocheirus occidentalis Western Ringtail Possum	Vulnerable	No	Unlikely	No, no evidence that species occurs within the clearing footprint (Harewood 2015 and Astron 2014).
Setonix brachyurus Quokka	Vulnerable	No	Unlikely	No as no suitable habitat. This species has a very restricted distribution on the mainland. It is highly unlikely to be present on the site.
Plants				
Andersonia gracilis	Endangered	No	Unlikely	No, no previous records or findings of Declared Rare Flora within or in proximity to the clearing footprints. Highly unlikely to be present due to previous grazing and clearing activities (Ecoedge 2014 and Astron 2014).
Banksia nivea subsp. uliginosa	Endangered	No	Unlikely	
Banksia squarrosa subsp. argillacea	Endangered	Marginal	Unlikely	
Brachyscias verecundus	Critically Endangered	No	Unlikely	
Caladenia huegelii King Spider-orchid	Endangered	No	Unlikely	
Caladenia winfieldii Majestic Spider-orchid	Endangered	No	Unlikely	
Centrolepis caespitosa	Endangered	No	Unlikely	
Chamelaucium sp. C Coastal Plain	Vulnerable	No	Unlikely	
Drakaea elastica	Critically Endangered	No	Unlikely	
Darwinia foetida	Critically Endangered	No	Unlikely	
Diuris micrantha Dwarf Bee-orchid	Vulnerable	No	Unlikely	
Diuris purdiei Purdie's Donkey-orchid	Endangered	No	Unlikely	
Darwinia whicherensis	Endangered	No	Unlikely	
Lambertia echinata subsp. occidentalis	Endangered	No	Unlikely	
Synaphea sp. Fairbridge Farm Selena's Synaphea	Critically Endangered	No	Unlikely	
Synaphea stenoloba Dwellingup Synaphea	Endangered	No	Unlikely	

Of the species identified within **Table 1**, the three species of black cockatoo (*Calyptorhynchus banksii naso, Calyptorhynchus baudinii and Calyptorhynchus latirostris*) and the Rainbow bee-eater (*Merops ornatus*) have been identified as either occurring or having the potential to occur within the clearing footprint. An assessment of the potential impacts to these species as a result of the proposed action is provided below.

Black Cockatoos

Lot 81

The black cockatoo assessment (Harewood 2015) identified 531 trees within the clearing footprint of Lot 81 with a diameter at breast height (DBH) greater than 50cm. Forty six (46) trees appeared to have at least one hollow potentially of a size large enough for a black cockatoo to use for nesting though this assessment was based on the size of the entrance into an apparent hollow only (refer to **Figure 1**). No actual evidence of any hollows being used by black cockatoos for nesting (currently or previously) was seen (Harewood 2015).

The following represents a list of the observed plant species present within Lot 81 known to be used by one or more of the black cockatoo species as a food source (i.e. foraging habitat).

- Marri – *C. calophylla*/Mountain Marri *C. haematoxylon* - flowers, seeds, nectar, grubs.
- Jarrah – *E. marginata* – seeds.
- Bull banksia – *B. grandis* - flowers, seeds, grubs.
- Snottygobble - *P. longifolia* – seeds.

Jarrah and marri/mountain marri are the dominant tree species on site and make up most of the vegetation present. Banksia and snottygobble are relatively uncommon and make up only a very small proportion of the available foraging habitat.

Evidence of two species of black cockatoos foraging onsite was observed during the field survey in the form of numerous examples of chewed jarrah fruits and to a lesser extent chewed marri/mountain marri fruits and banksia cones. The majority of this evidence (jarrah and marri/mountain marri fruits) was attributed to the forest red-tailed black cockatoo, a species which appears to be relatively common in the area. Foraging evidence attributed to Baudin's black cockatoo (marri and banksia cones) was less commonly recorded. Because of the dominance of jarrah and marri/mountain marri, all of the vegetation present can be regarded as foraging habitat for black cockatoos.

Lot 2

During the fauna assessment (Astron 2014), all three species of black cockatoo were positively identified as occurring within the clearing footprint either via visual observations of the species, chewed marri fruit or voice calls.

A total of 63 eucalypt trees with a DBH greater than 50 cm were recorded in the clearing footprint of Lot 2. Of the 63 trees recorded, 11 trees contained hollows potentially suitable for black cockatoos (refer to **Figure 2**). Definitive evidence of past or current breeding activity by black cockatoos was difficult to ascertain; however, two trees may have been utilised by black cockatoos for breeding, as indicated by marked scratchings at the entrance of the hollow. Two of the other hollow bearing trees recorded contained an active hive of the introduced European honey bee (*Apis mellifera*).

The high number of marri and jarrah trees present within the clearing area provide foraging opportunity for black cockatoos, as evidenced in the form of chewed fruits throughout the area. Given the homogenous nature of the vegetation, the entire survey area would be considered suitable black cockatoo foraging habitat.

Potential Impacts

Based on the results of the black cockatoo assessments (Harewood 2015 and Astron 2014), it is evident that the clearing footprint provides foraging and potential breeding habitat. In order to determine the significance of the impact from the proposed action on black cockatoos, an assessment of Carnaby's black-cockatoo against the EPBC significant impact criteria provided in the EPBC *Significant impact guidelines* (DotE 2013) was conducted (**Table 2**).

Table 2. Assessment against EPBC Significant impact guidelines.

EPBC Criteria (DotE 2013)	Likelihood and Rationale
Lead to a long-term decrease in the size of a population (or an important population)	**Unlikely**. Any disturbance to black cockatoo habitat is highly likely to be, at most, at the scale of the localised displacement of foraging and potentially breeding activity by a small number of birds (i.e. not a population). In order to determine whether the loss of 67 potential habitat trees with hollows will have a significant impact on black cockatoo populations within the local area, the area of potentially suitable breeding habitat in secure tenure was calculated within a 15km radius of the clearing footprint. This resulted in approximately 19,000 ha within the Wellington State Forest, 1,470 ha in the Dardanup Conservation Park and 6,270 ha in the Boyanup State Forest. These areas contain jarrah-marri forest, predominately in a better condition than the clearing footprint (due to restricted anthropogenic disturbances) and are in secure tenure. Accordingly, in comparison to the area of potentially suitable breeding habitat within a 15km radius and in secure tenure, the clearing of 27.4 ha would result in the reduction of 0.1% of potentially suitable breeding habitat in the local area. This reduction is unlikely to result in a long-term decrease in the size of a population.
Reduce the area of occupancy of the species (or an important population)	**Minor**. As discussed above, located within a 15km radius of the clearing footprint is approximately 26,740 ha of jarrah-marri vegetation in a predominantly better condition and in secure tenure. The clearing of 27.4 ha would result in the reduction 0.1% of potentially suitable breeding habitat in the local area. Furthermore, the clearing footprint is located immediately adjacent to the Dardanup Conservation Park which provides 1,470 ha of quality habitat (given that it has been protected for conservation purposes since 1987) for black cockatoos. The proposed action will result in a minor reduction in the area of occupancy for the species.
Fragment an existing population (or important population) into two or more populations.	**Unlikely**. The clearing footprint does not constitute a corridor between habitat areas and is not situated between two vegetated areas. The proposed action is an expansion of the existing footprint as such it is unlikely to substantially fragment habitat or impose a physical barrier to the movement of black cockatoos between surrounding habitat areas. Large, contiguous areas of native vegetation surround the clearing footprint which currently provide important habitat linkages to

	surrounding areas. The proposed clearing is unlikely to significantly fragment the habitat available in the local area and/or regional area. Based on the mobility of the species and the availability of suitable habitat surrounding the clearing footprint, fragmentation of populations is considered very unlikely.
Adversely affect habitat critical to the survival of a species.	**Likely**. The proposed action will result in the removal of 27.4 ha of foraging habitat and 67 potential breeding trees with hollows. However, in accordance with the Recovery Plan for Carnaby's cockatoo (DPaW 2013), habitat critical to the survival of the species contains a watering resource. The Lots do not contain suitable watering habitat for black cockatoos, with the closest watering resource located 2.5km south of the clearing footprint, on the other side of the Dardanup Conservation Park. In relation to Baudin's cockatoo and the forest red-tailed black cockatoo, the vegetation that will be removed consists of habitat described in the species recovery plan as critical for the survival of these species (DEC 2008). As discussed above, located within a 15km radius of the clearing footprint is approximately 26,740 ha of jarrah-marri vegetation in a predominantly better condition and in secure tenure. The clearing of 27.4 ha would result in the reduction 0.1% of potentially suitable breeding habitat in the local area. While the proposed clearing will adversely affect up to 27.4 ha of the species' critical habitat, this is a very small portion of the available critical habitat within the local area and the region.
Disrupt the breeding cycle of a population (or important population).	**Unlikely**. Of the 67 potential breeding trees with hollows within the clearing footprint, two may have been used by black cockatoos, although none were in use at the time of the surveys (August 2015 (Harewood) and November 2014 (Astron)). The surveys were undertaken within the main nesting periods of the three species, which are May/June and September-November for the forest red-tailed black cockatoo (FRTBC); August-December for Baudin's cockatoo and July-November for Carnaby's cockatoo, although fledging can occur year-round for FRTBC. While there will be a loss of up to 67 potential breeding trees with hollows it is not likely that the impact will disrupt the breeding cycle of an important population of any of the black cockatoo species. The clearing footprint is situated adjacent to State forest that comprises large expanses of the species critical habitat and there is estimated to be more than 26,740 ha of better quality habitat in secure tenure within 15 km of the clearing footprint. Where possible, clearing of vegetation will be timed so that it is undertaken outside of the known breeding seasons of the three species to ensure no disruption occurs to any nesting birds or young. However, where the operation timeframe dictates clearing within a breeding season, hollows will be checked prior to clearing by a suitably qualified 'fauna spotter'. Any that are in use by a nesting pair will be assessed for likely hollow persistence, generally 0-3 months for black cockatoos (from egg to fledging). If required, the tree will be excluded from clearing until such time as the young have left the nest.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	**Unlikely**. It is unlikely that this degree of clearing would lead to a decline in the species because the area of habitat that would be lost equates to only 0.1% of black cockatoo habitat within the local area. No impact on habitat extent or quality outside of the clearing footprint is expected given the provision of a 50m vegetated buffer to the Dardanup Conservation Park. The proposed action is an expansion of an existing land use that has been in operation for over 20 years. In addition, the proponent will implement appropriate mitigation measures to minimise/prevent impact on habitat outside the clearing footprint.
Result in invasive species that are harmful to a threatened species	**Unlikely**. The proposed action may potentially exacerbate existing invasive species (such as weeds and introduced predators) that already occur within the Lots and surrounding areas if not appropriately managed. The proponent will implement controls that will minimise the likelihood of the establishment of new invasive species or the expansion of existing invasive species

becoming established in the threatened species' habitat.	including, Weed Control Management; Dieback Management; and Vehicle Hygiene Procedures. The proposed action is an expansion of existing activities that have been occurring for over two decades. With appropriate controls, as described above and developed as required, the proposed action is unlikely to result in new invasive species becoming established, or existing species spreading within the clearing footprint or surrounds to the extent that black cockatoos are substantially impacted. Furthermore, a 50m vegetated buffer will be maintained between the Dardanup Conservation Park and the clearing footprint.
Introduce disease that may cause the species to decline.	**Unlikely.** There is potential that the introduction/spread of *Phytophthora* Dieback could reduce the flora species diversity and density, and potentially impact on the habitat quality for black cockatoos. Dieback management controls will be implemented throughout the expansion and operation of the sites.
Interfere with the recovery of the species	**Unlikely**. The proposed action is unlikely to interfere significantly with the recovery of Carnaby's black cockatoo as it is unlikely to interfere with the recovery actions outlined in the *Carnaby's cockatoo (Calyptorhynchus latirostris) Recovery Plan* (DPAW 2013). Actions in the Recovery Plan include: • protect and manage important habitat: clearing of 27.4 ha of habitat will be required. This equates to 0.1% of habitat available locally. Offsets will be implemented to address the residual impacts associated with the proposed action. • conduct research to inform management: the proposed action will not interfere with research programs. • undertake regular monitoring: the proposed action will not interfere with regular monitoring. • manage other impacts: suitable management plans will be implemented to avoid other impacts (i.e. disease introduction, collision with vehicles) including the preparation of a Weed Control Management Plan; Dieback Management Plan and Environmental Management Plan. • undertake information and communication activities: inductions for all site personnel will be undertaken during construction works which will include information pertaining to black cockatoos and their conservation significance. • engage with the broader community – as above. The proposed action is unlikely to interfere substantially with the recovery of the Baudin's black cockatoo and the forest red-tailed black cockatoo as it is unlikely to interfere with the recovery actions outlined in the *Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Redtailed Black Cockatoo Calyptorhynchus banksii naso) Recovery Plan* (DEC 2008). Actions in the Recovery Plan include: • seek the funding required to implement future recovery actions: the proposed clearing will not interfere with this action. • determine and promote non-lethal means of mitigating fruit damage by Baudin's Black Cockatoo in orchards: the proposed clearing will not interfere with this action. • eliminate illegal shooting: the proposed clearing will not interfere with this action. • develop and implement strategies to allow for the use of noise emitting devices in orchards: the proposed clearing will not interfere with this action. • determine and implement ways to remove feral Honeybees from nesting hollows: as a component of the Environmental Management Plan, strategies to remove feral Honeybees from the clearing footprint prior to undertaking the clearing will be investigated.

	• identify factors affecting the number of breeding attempts and breeding success and manage nest hollows to increase recruitment: offsets will be applied which will involve the protection of existing vegetation and the offsite protection of vegetation which contains breeding habitat. • determine and implement ways to minimise the effects of mining and urban development on habitat loss: the proposed clearing will not interfere with this action. • determine and implement ways to manage forests for the conservation of Forest Black Cockatoos: the proposed clearing will not interfere with this action. • identify and manage important sites and protect from threatening processes: the proposed action will result in the protection in perpetuity of approximately 50 ha of black cockatoo habitat which is zoned 'Rural'. • map feeding and breeding habitat critical to survival and important populations, and prepare management guidelines for these habitats: the proposed clearing will not interfere with this action. • monitor populations numbers and distribution: the proposed clearing will not interfere with this action. • determine the patterns and significance of movement: the proposed clearing will not interfere with this action • maintain the Cockatoo care program and use other opportunities to promote the recovery of Forest Black Cockatoos – the proposed clearing will not interfere with this action.

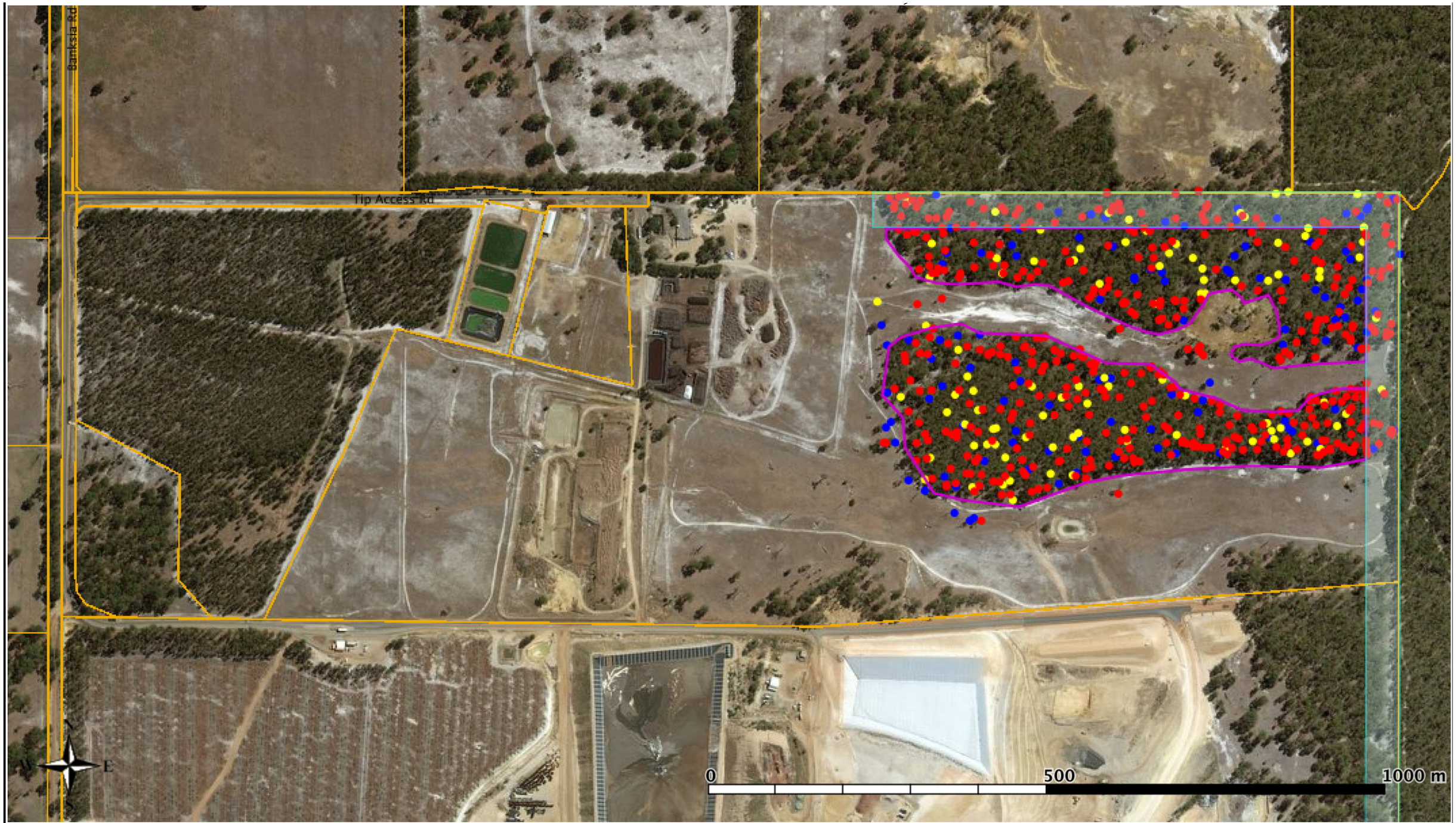
Rainbow Bee Eater

The rainbow bee-eater is one of the most common and widespread birds in Australia (Burbidge *et al*. 2010). The species winters from the Gascoyne north to Indonesia, moving south mainly in late September and early October and north from February to April (Johnstone and Storr 1998). Rainbow bee-eaters tend to prefer lightly wooded, preferably sandy country near water (Johnstone and Storr 1998). The rainbow bee-eater may build its nesting tunnels in semi-exposed sandy areas such as quarries, cuttings and mines.

The rainbow bee-eater may utilise the habitat onsite for possible foraging but sandy ground conditions suitable for construction of breeding burrows are not present.

Potential Impacts

Loss or modification of some natural foraging opportunities may occur as a result of development, but this species may utilise the area despite any future development as they often use modified environments. Accordingly, this species is unlikely to be significantly impacted by the proposed action.



Legend

- Clearing Area
- Habitat Trees with no hollows
- Habitat Trees with 1 hollows Habitat
- Trees with 2 or more hollows
- Roosting Tree

PROJECT **Lot 81, Banksia Road, Crooked Brook**

DRAWING TITLE **FIGURE 1 - Habitat Trees**

CLIENT **J+P Group**

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280

Telephone (08) 9755 7217
Mobile 0418 950 852

Project Number	Drawing Number	Revision
1516	**FIG 3**	**B**

Designed KMT Checked Date 5.7.18
Drawn PN Approved Sheet 1 of 1

Local Authority Shire of Dardanup

Legend

- Habitat Trees with no hollows
- Habitat Trees with 1 hollows
- Habitat Trees with 2 or more hollows
- Potential Habitat Tree

PROJECT **Lot 2, Banksia Road, Crooked Brook**

DRAWING TITLE **FIGURE 2 - Habitat Trees**

CLIENT **J+P Group**

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280

Telephone (08) 9755 7217
Mobile 0418 950 852

Project Number	Drawing Number	Revision
1516	**FIG 4**	**A**

Designed KMT Checked Date 21.5.18
Drawn PN Approved Sheet 1 of 1
Local Authority Shire of Dardanup