ENVIRONMENTAL SCOPING DOCUMENT

BIDAMINNA PROJECT

22 FEBRUARY 2024

EPA ASSESSMENT NO: 2355
PREPARED FOR IMAGE RESOURCES NL
BY PRESTON CONSULTING PTY LTD

Document prepared for:

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ACKNOWLEDGEMENT OF COUNTRY

In the spirit of reconciliation Image Resources NL and Preston Consulting Pty Ltd acknowledge that this project is proposed on the lands of the Yued People of the Noongar Nation. We pay our respects to Elders past, present and emerging and recognise their continuing connection to land, sea, culture and community.

DOCUMENT CONTROL

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THE PROPOSAL

Image Resources NL (Image) are planning to develop the Bidaminna Project (the Proposal) a mineral sands mine located approximately 15 km southwest of Regan's Ford in the Wheatbelt region of Western Australia (WA) (Figure 1). The Proposal will be developed within a Mine Development Envelope (MDE; Figure 2) and an External Infrastructure Development Envelope (EIDE) which will include additional external infrastructure such as water bores, power supply and pipelines (Figure 3).

Image proposes to develop a mine dredge pond, processing plant, solar drying ponds and supporting infrastructure over an estimated mine life of ten years. Mining and progressive rehabilitation is planned in stages using dredge mining methods.

Dredge mining will require the removal of overburden by conventional earthmoving equipment, prior to accessing the ore. Overburden will initially be stockpiled external to the mine path until there is sufficient capacity in the dredge pond to allow progressive backfill. Ore will then be excavated by a dredger that will be floated on a dredge pond. The dredge pond will be progressively filled and rehabilitated to pre-mining profile with the pre-existing land use reinstated as mining advances. Where feasible, disturbance will be minimised by utilising the backfilled mine footprint to locate supporting infrastructure prior to commencing rehabilitation.

Dredge mining delivers the slurried ore direct to the feed preparation plant before being pumped to the wet concentrator plant (WCP). The WCP recovers the contained heavy minerals via gravity separation, producing a heavy mineral concentrate (HMC) as well as sand tails and clay fines which will be returned to mine area. Following dewatering using a cyclone, sand tails may initially require temporary storage adjacent to the mine path, however, will be returned to the dredge pond once sufficient capacity is available. Clay fines will be returned to the dredge pond or pumped to solar drying ponds before being returned to the mine path. The final product HMC will be stacked on a drainage pad outside the WCP, where it will be allowed to drain and dry for a short period of time prior to being transported by trucks off site for processing or export using existing port facilities.

Water supply is targeted to be sourced from within the MDE however external supply may be required from the EIDE (to be determined once groundwater investigations are complete).

Power supply will be sourced from onsite generation (approximately 10 Megawatt (MW)), external power lines, renewable energy or a hybrid of options.

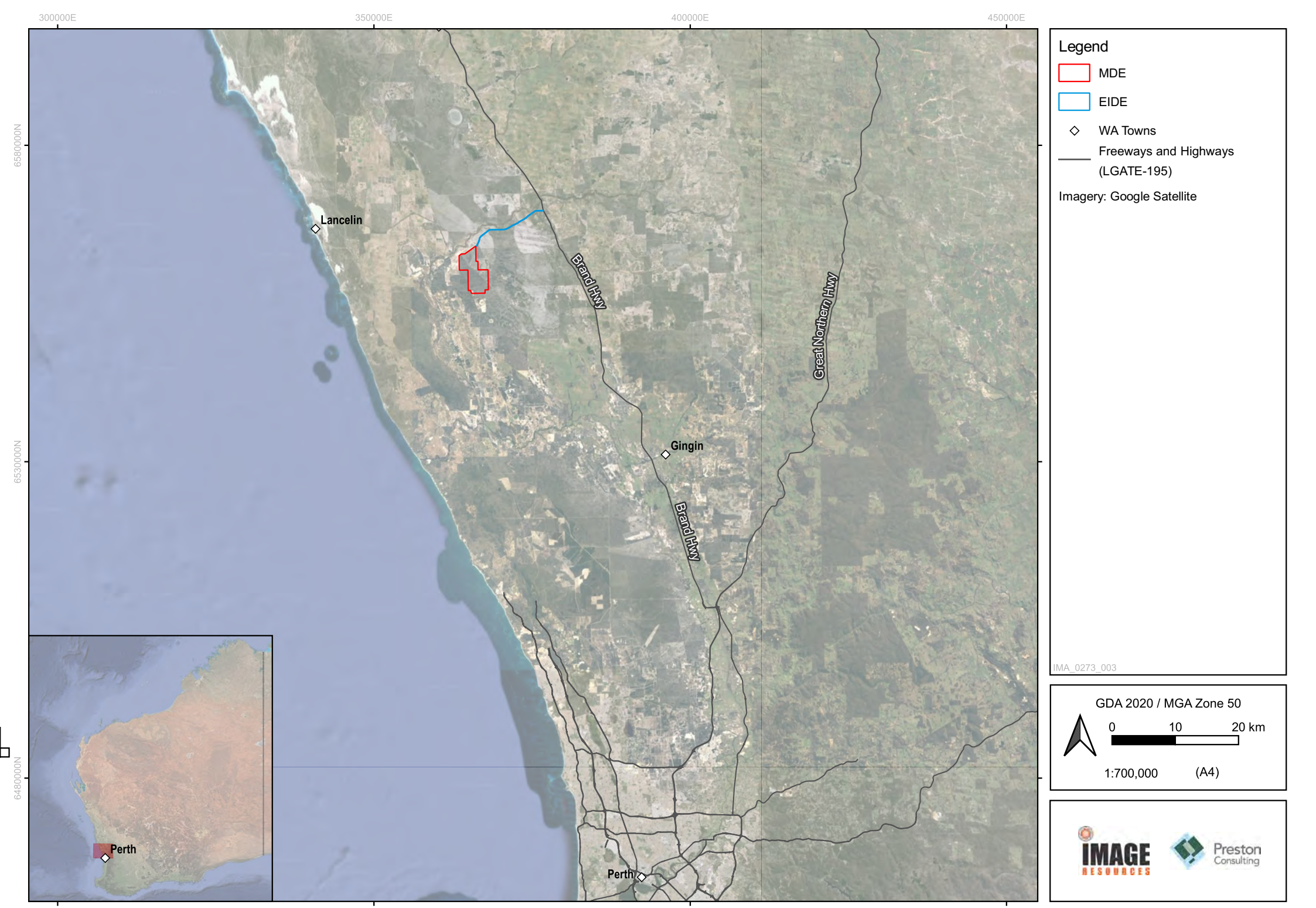

Figure 1: Proposal Location

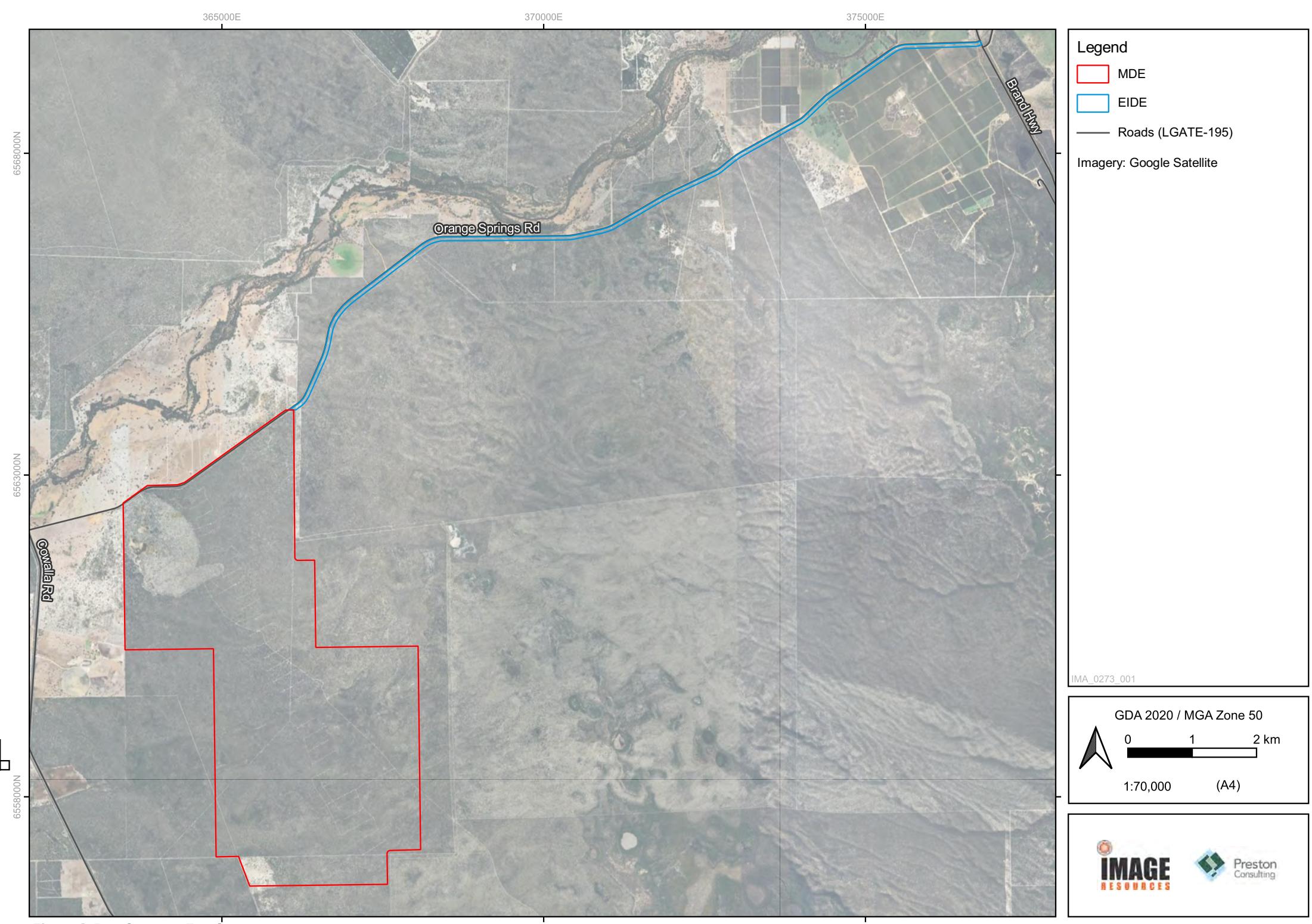

Figure 2: Development Envelopes

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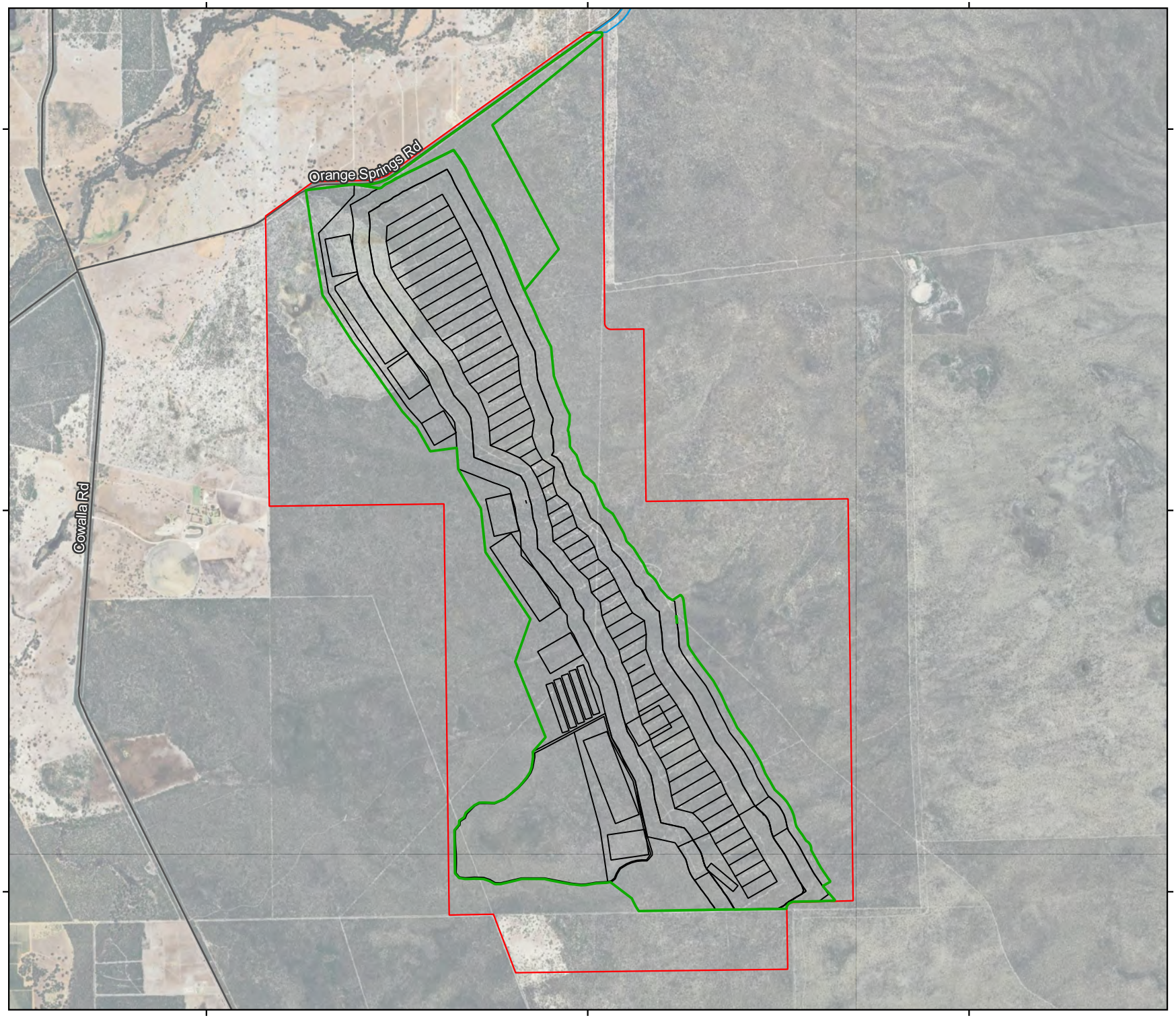

Legend

- Proposed Layout
- MDE
- EIDE
- Indicative Disturbance Footprint
- Roads (LGATE-195)

Imagery: Google Satellite

IMA_0273_002

GDA 2020 / MGA Zone 50

0 0.5 1 km

1:40,000 (A4)

IMAGE RESOURCES

Preston Consulting

Figure 3: Proposed MDE and Indicative Disturbance Footprint

AS 24/01/2024

1 INTRODUCTION

The Environmental Protection Authority (EPA) has determined that the above proposal is to be assessed under Part IV of the *Environmental Protection Act 1986* (EP Act).

The purpose of the Environmental Scoping Document (ESD) is to define the form, content, indicative timing and procedure of the environmental review, required by s. 40(3) of the Act.

Image has prepared this ESD according to the procedures in the EPA's Environmental Impact Assessment (EIA) (Part IV Divisions 1 and 2) Procedures Manual (EPA, 2021a).

The EPA requires the proponent to undertake the environmental review according to the procedures in the EIA (Part IV Divisions 1 and 2) Administrative Procedures (EPA, 2021b) and the EIA (Part IV Divisions 1 and 2) Procedures Manual (EPA, 2021a), and the Instructions and Template: How to Prepare an Environmental Review Document (ERD; EPA, 2021c & d).

Image will undertake a review of the ERD to ensure the requirements of the relevant EPA instructions, templates and guidance have been met. The ERD will include a scoping checklist that identifies the section(s) and page number of the ERD indicating where both all the dot points in the scoping checklist on page 5 of the ERD Template (2021d) and the requirements of this ESD can be found. The ERD will define and describe all the components of the Proposal including the spatial location. This information will be informed by the survey undertaken.

Proposal information is provided in Table 1.

Table 1: General proposal and proponent information

Proposal Information	
Proposal name	Bidaminna Project
Proponent	Image Resources NL
Assessment Number	2355
Local Government Area	Shire of Gingin
Public review period	6 weeks
EPBC reference period	2022/09360

1.1 INDICATIVE TIMELINE

Table 2 sets out the indicative outline of the timing of the environmental review (indicative timeline) agreed between the EPA and the proponent.

Table 2: Indicative timing of the environmental review

Name	Milestone	Party	Completion date
Milestone 1	EPA decides to assess (level of assessment set)	EPA Services	23 January 2023
Milestone 2	EPA approves ESD	EPA Services	26 March 2024
Milestone 3*	Proponent submits first draft ERD	Proponent	1 April 2024
Milestone 4	EPA and Department of Climate Change, Energy, the Environment and Water (DCCEEW) provide comments on first draft ERD (*6 weeks from receipt of ERD*)	EPA Services, DCCEEW	13 May 2024
Milestone 5**	Proponent submits revised draft ERD for review by EPA and DCCEEW.	Proponent	10 June 2024
Milestone 6	EPA authorises release of ERD for public review	EPA Services	24 June 2024 - 2 weeks after ERD is accepted
Milestone 7	Proponent releases ERD for public review	Proponent	1 July 2024 - 1 week after EPA authorisation
Milestone 8	Close of review period	Other	12 August 2024 - 6 weeks after ERD release
Milestone 9	EPA provides summary of submissions to proponent	EPA Services	2 September 2024 - 3 weeks from the close of public review period
Milestone 10	Proponent provides Response to Submissions	Proponent	30 September 2024 4 weeks after EPAS provides response to submissions
Milestone 11	EPA and DCCEEW review response to submissions	EPA Services, DCCEEW	28 October 2024 - 4 weeks from receipt of response to submissions
Milestone 12	EPA accepts response to submissions	EPA Services	25 November 2024 – allows 4 weeks from EPA review of initial response to submissions to finalise response to submissions
Milestone 13	EPA prepares draft assessment report and completes assessment	EPA Services	6 January 2025 - 6 weeks from acceptance of response to submissions
Milestone 14	EPA finalises assessment report (including two weeks consultation on draft conditions) and gives report to Minister	EPA Services	17 February 2025 - 6 weeks from completion of draft assessment

*Milestone 3 may be delayed if Image requires additional time to finalise the detailed information required for the ERD.

**Milestone 5 may be delayed if the survey information does not adequately assess impacts to -MNES on the impact and (if required, the proposed offset site) and/or any required offset measures are not deemed adequate and further information is required.

1.2 COMMONWEALTH GOVERNMENT APPROVALS

The Proposal has been referred and determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and will be assessed via an accredited process under s.87 of the Act. The relevant matter of national environmental significance (MNES) for this Proposal is:

- listed threatened species and communities (s.18 & s.18A).

This draft ESD includes work required to be carried out and reported on in the ERD in relation to MNES. The ERD will also address the matters in Schedule 4 of the Environmental Protection and Biodiversity Conservation Regulations 2000.

The ERD will describe the scope of works that will be undertaken and how these works may have an impact on MNES. The MNES that may be impacted by the Proposal will be identified in the ERD and the potential impacts on these matters addressed within each relevant preliminary environmental factor. Proposed offsets to address significant residual impacts on MNES will also be discussed in the ERD.

2 FORM AND CONTENT

The EPA requires that the form of the report on the environmental review required under section 40 of the EP Act is in accordance with the Instructions and Template: *How to prepare an Environmental Review Document* (EPA, 2021c&d).

2.1 PRELIMINARY KEY ENVIRONMENTAL FACTORS

Preliminary Key Environmental Factors have been identified by the EPA in the record of the level of assessment as required under s.39(b) of the EP Act (Chair's Determination). The Preliminary Key Environmental factors for the environmental review are:

- Flora and vegetation;
- Terrestrial fauna;
- Inland waters;
- Terrestrial environmental quality;
- Human Health; and
- Social surroundings.

2.2 SPECIFIC AND/OR ADDITIONAL WORK REQUIRED

The general form and content of the ERD will be in accordance with the Instructions and Template: *How to prepare an Environmental Review Document (*EPA, 2021c&d).

Table 3 outlines the proposal specific and/or additional work required as it relates to preliminary key environmental factor/s for the Proposal.

Table 3: Proposal specific and/or additional required work

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
All Environmental Factors			
1.	Describe the application of the mitigation hierarchy in the Proposal design, construction, operation and closure, demonstrating that the design of the Proposal has addressed the mitigation hierarchy in relation to impacts on key environmental factors. Detail actions undertaken to avoid, minimise and mitigate Proposal impacts. Provide a consolidated list of mitigation measures and those proposed to be regulated by State and Local Government. This will include an assessment of the environmental benefits and costs of potential mitigation measures. For significant impacts management and/or monitoring plans (presented in accordance with EPA and DCCEEW instructions) may be prepared to be implemented pre- and post-construction to demonstrate that residual impacts are not greater than predicted. If a management and/or monitoring plan is required, it will be prepared for inclusion in the ERD. Describe and assess the expected or predicted effectiveness of the management plan if developed.	No	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
2.	Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014), the EPBC Act Environmental Offsets Policy (DSEWPaC, 2012) and include reference to the Commonwealth Offset Assessment Guide for any MNES.	Yes	Yes
3.	Where significant residual impacts remain (for flora and vegetation or any other key environmental factor), propose an appropriate offsets package that is consistent with the WA Environmental Offsets Policy and Guidelines and the EPBC Act Environmental Offsets Policy. Any proposed offsets package will be assessed against the EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), 2012) and the six offset principles in the WA Environmental Offsets Policy (EPA, 2011). The Commonwealth offsets calculator and the WA metric will be used to calculate offsets and their requirements for MNES and state values respectively. Where offsets are required an offset management plan will be prepared. Spatial data defining the area of significant residual impacts will also be provided. Demonstrate how the proposed offset (if needed) is consistent with the EPBC Act *Environmental Offsets Policy* including, but not limited to the extent to which the proposed offset correlates to, and adequately counterbalances for, the residual significant impacts on MNES (this is to include completion of an offsets guide and justification), and the conservation gain to be achieved by the proposed offset (i.e. future loss, degradation or damage to the protected matter).	Yes	Yes
4.	Demonstrate and document in the ERD how the EPA objective for each factor can be met. This will require specific expected outcomes for each environmental factor, and information about what monitoring is proposed to ensure the outcome can be measured and achieved.	No	No
5.	Demonstrate and document in the ERD information sufficient to allow the Commonwealth Minister to make an informed decision on whether or not to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.	No	Yes
6.	Demonstrate that all practicable measures have been taken to reduce the area of the proposed disturbance footprint based on progress in the Proposal design and understanding of the environmental impacts. Detail any feasible alternatives to the proposal, including taking no action, a comparative description of the environmental impacts of each alternative on matters protected by the controlling provisions for the action in the ERD and sufficient detail to make clear why any alternative is preferred to another.	No	No
7.	Provide details about Image's environmental record, including details of any proceedings under a Commonwealth or State law for the protection of the environment or the conservation and sustainable use of natural resources. Provide details of Image's environmental policy and planning framework.	No	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
Flora and Vegetation			
8.	Flora and Vegetation surveys conducted in accordance with current EPA Technical Guidance and DCCEEW guidance for specific flora species including a detailed and targeted survey of the Development Envelopes and surrounds where applicable. The detailed survey should determine the quality of the Banksia Woodlands of the Swan Coastal Plain ecological community within the survey area. If previous surveys are relied on for context, a consolidated report should be provided including the integrated results of the surveys, and justification to demonstrate that they are relevant and consistent with EPA significance.	No	Yes
9.	Identify and describe the flora species recorded from the studies and surveys. Determine whether any flora species recorded are of State and Commonwealth significance, and provide an analysis of local and regional context, (refer to Environmental Factor Guideline – Flora and Vegetation for definition of significant flora) (EPA, 2016).	Yes	Yes
10.	Identify and describe the vegetation present in the study area. Determine whether any vegetation identified, including ecological communities, is of State and Commonwealth significance, and provide an analysis of local and regional context, (refer to Environmental Factor Guideline – Flora and Vegetation for definition of significant vegetation) (EPA, 2016).	Yes	Yes
11.	If potential impacts from weed species are considered significant, specific weed management measures, and a program of works will be provided with the ERD to identify, map, manage and mitigate weeds.	No	No
12.	A comprehensive dieback survey of both development envelopes, inclusive of foraging habitat for Carnaby's Cockatoo.	No	No
13.	Provide specific dieback monitoring and management measures which address dieback risks, impacts and strategies for all areas of disturbance associated with the Proposal. The Threat Abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (DoEE, 2018) will be used to guide the dieback risk assessment. The management measures will incorporate the results of Work Item 12. Describe and assess the expected or predicted effectiveness of the dieback management measures.	No	No
14.	The survey reports and data are to be submitted via the Index of Biodiversity Surveys for Assessments (IBSA) Submissions with the IBSA number provided for verification.	No	Yes
15.	Provide a figure depicting survey effort applied in relation to the study area and development envelopes, identifying the direct and indirect impact areas.	No	Yes
16.	Provide maps showing the recorded locations of significant flora in relation to the Proposal and species distributions. Provide maps showing the extent of all vegetation, and significant vegetation, in the study area, the development envelopes, direct and indirect impact areas, and in the local and regional contexts.	Yes	Yes
17.	Assess the potential direct and indirect impacts of the construction and operational elements of the Proposal on identified environmental values. Include figures showing the predicted extent of loss and corresponding vegetation quality breakdown.	Yes	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
18.	Describe and quantify the extent of potential direct and indirect impacts to all vegetation and significant flora and vegetation that may occur following implementation of the proposal during both construction and operations, in a local and regional context.	Yes	Yes
19.	Provide a quantitative assessment of impacts (including indirect and cumulative impacts): • For significant flora, this includes; o Number of individuals and populations in a local and regional context; o Numbers and proportions of individuals and populations directly or potentially indirectly impacted; and o Numbers/proportions/populations currently protected within the conservation estate (where known). • For all vegetation units (noting threatened and priority ecological communities and significant vegetation) this includes; o Area (in hectares) and proportions directly or potentially indirectly impacted; and o Proportions/hectares of the vegetation unit currently protected within conservation estate (where known).	Yes	Yes
20.	Provide evidence-based rehabilitation strategies that includes details of the methods for collecting seed, topsoil management, planting strategies, success metrics and predicted timeframes. Details of the post-mining landform are to be included. If a Mine Closure Plan (MCP) is required it should be prepared in accordance with the Department of Energy, Mines, Industry Regulation and Safety's (DEMIRS) *Statutory Guideline for Mine Closure Plans (March 2020)* and *Mine Closure Completion Guideline (November 2021)* (Department of Mines, Industry Regulation and Safety, 2020 & 2021).	No	Yes
21.	Outline the environmental values within Moore River National Park, including any groundwater dependent species that may occur and demonstrate how the Proposal would mitigate and/or manage indirect and holistic impacts. Include any measures taken to avoid impacts to the Moore River National Park.	Yes	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
Terrestrial Fauna			
22.	In accordance with EPA Guidance, conduct a desktop study to identify and characterise the vertebrate and significant invertebrate fauna (including Short Range Endemic fauna (SRE)) and fauna habitats in a local and regional context; and based on the results of the desktop study conduct: • A Basic survey and fauna habitat assessment; and/or • A Detailed survey including sampling inside and outside the impact areas that may be directly or indirectly impacted; and/or • Targeted surveys for significant fauna that may be directly or indirectly impacted, which may include; o A contemporary and detailed survey of Black Cockatoo roosting and breeding habitat within the MDE and outside of the MDE (as required to inform impact assessment) *in accordance with Survey Guidelines for Australia's Threatened Birds and the Habitat Quality Survey Tool for Black Cockatoos* (DEWHA, 2010; DAWE, 2022) o A detailed survey of potential aestivation habitat of the Western Swamp Tortoise (*Pseudemydura umbrina*) (if present), consistent with the *Survey guidelines for Australia's threatened reptiles* (DSEWPaC, 2011); o A Targeted survey for the native bees *Leioproctus contrarius* and *Hylaeus globuliferus* and graceful sun-moth (*Synemon gratiosa*); and • If previous surveys are relied on for context, a consolidated report should be provided including the integrated results of the surveys, and justification to demonstrate that they are relevant and consistent with EPA guidance.	No	Yes
23.	All surveys and data should be submitted via the IBSA Submissions with the IBSA number provided for verification.	No	No
24.	Provide a map of the survey effort applied in relation to the study area, terrestrial fauna habitats (including Carnaby's Cockatoo foraging and potential roosting habitat), and development envelopes, identifying the direct and indirect impact areas.	No	No
25.	Identify and describe the fauna habitats identified by the studies and surveys. Describe significant fauna habitats, including but not limited to SRE invertebrate microhabitats, refugia, breeding areas, key foraging habitat, movement corridors and linkages.	No	Yes
26.	Provide figure(s) and maps showing the extent of fauna habitats in relation to the Proposal and species distributions.	No	Yes
27.	Identify and describe the fauna assemblages present and likely to be present within the development envelopes that may be impacted by the Proposal.	No	Yes
28.	Identify significant and restricted fauna and describe in detail any potential impacts (direct, indirect and holistic), their known ecology, likelihood of occurrence, habitats and known threats. Describe the fire history of the Proposal area, with reference to black cockatoo foraging habitat quality.	Yes	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
29.	Assess the extent of direct and indirect disturbance in addition to known existing threats on significant and other fauna species, including amount of habitat and percentages of habitat types to be disturbed or otherwise impacted, the level of disturbance specific to the proposal, and independent of known existing threats to assist in determination of significance of impacts. Consider whether the remaining habitat has adequate carrying capacity.	Yes	Yes
30.	Map the locations of significant and restricted fauna records in relation to the fauna habitats (including Carnaby's Cockatoo foraging and roosting habitat, the study area, the development envelopes, and direct and indirect impact areas.	Yes	Yes
31.	Describe and quantify the extent of potential direct and indirect and, including percentages, to habitats and significant species that may occur following implementation of the Proposal during both construction and operations, in a local and regional context (including a holistic impact assessment).	Yes	Yes
32.	Provide a table of the proportional extents of each habitat within the study area and DEs and the predicted amount to be directly impacted and remaining.	Yes	Yes
33.	Describe and quantify the extent of cumulative impacts of all elements/stages of the Proposal on significant fauna and fauna habitat extents, at both local level and regional level, and include a discussion on the significance of potential cumulative impacts to habitats as a result of implementation of the Project (including a holistic impact assessment).	Yes	Yes
34.	Outline the proposed avoidance and mitigation measures to reduce the potential impacts of the Proposal. Include proposed management and/or monitoring measures for significant impacts that will be implemented pre- and post-construction to demonstrate and ensure residual impacts are not greater than predicted. If management and/or monitoring plans are required they are to be developed in accordance with the EPA's Instructions and will be prepared for inclusion in the ERD.	No	Yes
35.	Discuss proposed management, monitoring and control/mitigation methods to be implemented so that the radiological impacts do not pose an unacceptable risk to fauna. Assessment is to consider Commonwealth guidelines including the *Radiation Safety Act 1975* regarding radiation as appropriate.	No	Yes
36.	Predict the residual impacts from the Proposal on terrestrial fauna and fauna habitats after considering and applying the mitigation hierarchy.	Yes	Yes
37.	Discuss closure and rehabilitation management measures, outcomes / objectives to be implemented, including why actions are required for the specific disturbance/impacts.	No	No
Inland Waters			
38.	Desktop water supply assessment to identify potential water supply sources for the Proposal and estimate potential yields based on available hydrogeological information.	No	No

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
39.	Characterisation of the baseline hydrological and hydrogeological regimes in a local and regional context. Include regional and local hydrogeological description, including representative hydrogeological profiles across the site and contour maps of groundwater levels, flow directions, aquifer structure, seasonal and long-term trends, recharge / discharge areas (vertical leakage), water quality (in consideration of the principles and methodologies from the guidance document *Using monitoring data to assess groundwater quality and potential environmental impacts* (Queensland Government, 2021) and identification of other groundwater users. Modern climate data for the study area consistent with reducing rainfall and recharge trends will be used.	Yes	Yes
40.	Hydrogeological investigations including modelling and analysis to identify sustainable water supply sources for the Proposal and predicted drawdown.	Yes	Yes
41.	Hydrogeological investigations including modelling and analysis to identify the predicted drawdown of the superficial aquifer. The investigation is to include groundwater drawdown contours for depth and rate for each stage of the mine life.	Yes	Yes
42.	Investigate the extent and value of wetlands within the development envelopes in accordance with Department of Biodiversity, Conservation and Attractions (DBCA) '*A methodology for the evaluation of wetlands on the Swan Coastal Plain, Western Australia, December 2017*'. Describe the anticipated impacts to the wetlands from implementation of the Proposal, and how the mitigation hierarchy will be applied to address potential impacts.	Yes	Yes
43.	Provide a water balance for the mining operations.	No	No
44.	Demonstrate how the final post-mining landform will be designed to conserve pre-mining hydrology of the site.	No	Yes
45.	Sensitivity analysis to identify areas that may be impacted by changes in groundwater levels within the mapped drawdown extent.	No	Yes
46.	Hydrogeological and ecological modelling and analysis to characterise all potential water-dependent ecosystems including groundwater dependent ecosystems (GDE), surface flow systems, wetlands, rivers/ creeks, springs, karstic and calcrete habitats (stygofauna) and phreatophytic (groundwater dependent) vegetation that may be directly or indirectly impacted by the Proposal.	Yes	No
47.	Characterisation and assessment of the impacts of groundwater drawdown within the entire drawdown footprint on other users, overlying aquifers, GDEs, surface water expressions and other environmental values.	Yes	Yes
48.	Description of the design, location and discharge location of temporary surface water diversions, with the potential to impact surface water or groundwater. Include whether the diversions will be located within and/or discharge to National Parks or Crown reserves. Define whether the diversions will be permanent or temporary and their potential impacts on surrounding environmental values.	Yes	No
49.	Hydrological investigations including modelling and analysis to determine suitable options to utilise excess dewater and avoid and minimise discharge (if excess dewater is likely).	No	No

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
50.	Characterisation and assessment of the resultant changes to surface water regimes (including volumes, discharge timing and velocity) as a result of the implementation of the Proposal.	Yes	Yes
51.	Mapping and spatial data that shows and defines the extent of the predicted direct and indirect hydrogeological and hydrological impacts to environmental values.	Yes	Yes
52.	Waste characterisation study to determine if leaching from waste materials has the potential to contaminate inland waters.	Yes	No
53.	Analyse, discuss and assess surface water and groundwater impacts. The analysis will include: • Changes in groundwater levels and changes to surface water flows associated with the Proposal; • Changes in groundwater and surface water quality associated with the Proposal; • Potential impacts from storage and leaching of materials with elevated concentrations of naturally occurring radionuclides and rare-earth minerals on surface water and groundwater. Assessment is to consider Commonwealth guidelines regarding radiation including the *Radiation Safety Act 1975* as appropriate; • The nature, extent and duration of impacts; • Impacts to other water users; and • Impacts on the environmental values of any sensitive receptors.	Yes	Yes
54.	A quantitative assessment of potential hydrological risks and impacts (e.g. groundwater drawdown, groundwater discharge and changes to surface water expressions and flows) on the values of the adjacent Moore River National Park.	Yes	Yes
55.	Describe and quantify the extent of cumulative impacts of all elements/stages of the Proposal on hydrological values, at both local level and regional level, and include a discussion on the significance of potential cumulative impacts to these values as a result of implementation of the Proposal (including a holistic impact assessment).	Yes	Yes
56.	Outline the proposed avoidance and mitigation measures to minimise the potential groundwater and surface water impacts of the Proposal. Include proposed management and/or monitoring measures for significant impacts that will be implemented pre- and post-construction to demonstrate and ensure residual impacts are not greater than predicted. If a management and/or monitoring plan is required it is to be presented in accordance with the EPA's Instructions and will be prepared for inclusion in the ERD.	Yes	Yes
57.	Discuss how Inland Waters environmental values will be managed/ addressed at mine closure and post closure monitoring. Include any rehabilitation measures to be implemented, actions to be undertaken, and outcomes and post closure land use objectives to be achieved. If removal/installation of water management infrastructure, and modifications to temporary/permanent diversions are proposed, this will be clearly outlined, and any potential impacts identified.	Yes	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
Terrestrial Environmental Quality			
58.	Undertake a soils and waste characterisation study including: • Mapping of the soil-landform associations of the MDE; • Assessment of the physical and chemical characteristics of the soil, overburden, tailings and tailings/soils/overburden blends and their suitability for rehabilitation; • A soil and waste resource inventory detailing the volumes and characteristics of soil and waste resources available; • A materials balance presenting both volumes of materials required for rehabilitation and materials available for rehabilitation; and • Implications for materials management. All soil investigations, and physical and chemical testing of these materials, will be carried out in accordance with the relevant methodologies published by the Soil Science Association of Australia	No	No
59.	Desktop ASS risk assessment to determine the risk of presence of ASS above and below the water table. Undertake an ASS survey if results from the desktop risk assessment identify this to be necessary. Investigations will be undertaken in accordance with the principles and methodologies outlined in the national ASS guidance documents.	No	No
60.	Analyse, discuss and assess impacts to terrestrial environmental quality. The analysis will include: • Changes in soil quality associated with the Proposal; • The nature, extent and duration of impacts; and • Impacts on the environmental values of any sensitive receptors.	No	No
61.	Discuss proposed impact avoidance and minimisation, including any management, monitoring and mitigation measures, to terrestrial environmental quality as a result of implementation of the proposal.	No	No
62.	Discuss closure and rehabilitation measures to be implemented, and outcomes/objectives to be achieved.	No	No
63.	Demonstrate and document how the EPA's objective for this factor can be met, with reference to relevant national and state protection measures, standards and guidelines Specific expected outcomes will be provided, and information about what monitoring is proposed to ensure the outcome can be measured and achieved.	No	No
Social Surroundings			
64.	Undertake a heritage assessment (Aboriginal and European), utilising desktop information, and archaeological and ethnographic heritage surveys as required in order to: • Make an assessment of listed heritage sites; • Determine the importance of the site from an Aboriginal perspective (including heritage sites, and traditional uses such as bush tucker and medicine); • Assess the likelihood of significant European or Aboriginal heritage sites being present in the development envelopes	No	No

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
65.	Conduct consultation with traditional owners (Yued People) during the assessment process to determine the heritage values of the development envelopes and surrounding area, including whether any additional (e.g., unregistered) Aboriginal Heritage Sites are located within the development envelopes. Consultation is also to include discussions about how any identified heritage values are to be protected or managed.	No	No
66.	Undertake a dust assessment which includes: • Identification of sensitive receptors, dust sources and controls; • Consideration of dust emissions at all stages and for all elements of the proposal, and for any future activities that may be implementable should the proposal be approved; • Assessment of residual impacts from all dust emitting activities on sensitive receptors; • Consideration of health and amenity impacts, and dust composition and particle size as part of assessing potential impacts of dust emissions on sensitive receptors; • Consideration of dust emission impacts on nearby flora and vegetation; • Consideration of recommended separation distances in EPA Guidance Statement No. 3: Separation distances between industrial and sensitive land uses (EPA, 2005); and • Consideration of baseline levels of dust and other pollutants, and results of other air quality studies conducted in the area, as a means of assessing current/existing impacts and the likelihood of exceedances due to contributions from the proposal. Conduct air dispersion modelling that complies with *Air Quality Modelling Guidance Notes* (Department of Environment; DoE, 2006), based on typical worst-case meteorological conditions and an analysis of modelling results against guidelines and relevant thresholds. Modelling will be conducted using a non-steady state modelling approach which evaluates the effects of spatial changes in the meteorological and surface characteristics. Air dispersion modelling will be conducted to predict deposition rates of total suspended particulate, ambient concentrations, PM_{10} and $PM_{2.5}$ across the MDE.	Yes	No
67.	Describe how dust will be avoided or minimised, including emergency/contingency excess dust management measures at each stage of the mining process. Contingency/emergency management measures to be implemented should be provided should the dust emissions be greater than the modelled/anticipated. The dust management measures are to be revised following the outcomes of the dust assessment described at Work Item 65. Describe and assess the expected or predicted effectiveness of the dust management measures.	Yes	No
68.	Undertake a detailed noise assessment including ambient baseline noise monitoring, identification of sensitive receptors, noise modelling based on proposed noise emissions (such as transport/truck movements) and mitigation strategies, typical worst-case meteorological conditions, an analysis of modelling results against Environmental Protection (Noise) Regulations 1997 and existing ambient noise levels. The modelling will also consider how ambient noise levels will be increased by the Proposal.	Yes	No

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
69.	If the noise assessment indicates that noise impacts may be significant, provide detailed noise management measures which identify how noise impacts to nearby sensitive receptors will be mitigated.	Yes	No
70.	Provide details on the night works and associated lighting required at the Proposal to determine the scale of potential light pollution. Discuss the how light pollution can be avoided, minimised and/or managed.	Yes	No
71.	Assess potential impacts on visual amenity, and potential impacts of noise, light and dust on Moore River National Park. Discuss how potential impacts to the Moore River National Park and visual amenity of the locality can be avoided and/or managed.	No	Yes
72.	In accordance with EPBC Act requirements, provide an assessment of the social and economic impacts (both beneficial and adverse) of the Proposal, at the local, regional and national level. This may include, but is not limited to: • A description of the consequences of not proceeding with the Proposal; • An indication of the financial investment the Proposal represents; and • Projected costs and benefits of the Proposal, including the basis for their estimation through cost /benefit analysis or similar studies e.g., employment opportunities expected to be generated by the Proposal.	No	No
73.	Describe and quantify the extent of cumulative impacts of all elements/stages of the Project on social surrounding values, at both local level and regional level, and assess the significance of potential cumulative impacts to these values as a result of implementation of the Project (including a holistic impact assessment). Consider emissions from dust, noise, light and odour generated from the Proposal.	Yes	No
74.	Characterise the values and significance of social surroundings in the vicinity of the Proposal.	No	No
75.	Identify the proposed activities and the potential scale and significance of direct and indirect impacts to social surroundings.	No	No
76.	Discuss the proposed management, monitoring and mitigation to prevent and minimise impacts to social surroundings as a result of implementing the Proposal.	No	No
Human Health			
77.	Collection and analysis of radiological baseline data.	No	No
78.	Characterisation of expected levels of radioactivity associated with each stage of the process including transportation of the final product.	No	Yes
79.	Assessment of the potential radiological impacts on workers (including transport workers) and members of the public both during operation and post closure, including a radiological dose assessment.	No	No
80.	Discussion of proposed best practice management, monitoring and control / mitigation methods to be implemented so that the cumulative impacts from all sources do not pose an unacceptable risk to the health and amenity of site personnel, the public and any other identified critical groups.	No	Yes

Scope Number	Description	Cumulative Impact Assessment (Y/N)	Does this relate to a MNES? (Y/N)
81.	Outline the outcomes / objectives, management, monitoring, trigger and contingency actions to ensure impacts (direct and indirect) are not greater than predicted.	No	Yes
Greenhouse Gas			
82.	Demonstrate and verify the greenhouse gas emissions estimates and methods of calculation.	No	No
83.	Assess the greenhouse gas emissions estimates against the EPA's Greenhouse Gas Emissions Environmental Factor Guideline.	Yes	No

2.3 CUMULATIVE IMPACT ASSESSMENT

The ERD will include a cumulative impact assessment to assess the significance of the Proposal contribution to impacts on relevant environmental values. The activities, boundaries and values relevant for the cumulative impact assessment in relation to each factor are summarised in Table 4 below.

Table 4: Cumulative Impact Assessment

Activities	Environmental values	Relevant factors	Boundaries
Clearing of native vegetation	Native vegetation	Flora and Vegetation	Cumulative impacts on native vegetation will be assessed by reviewing the remaining extent of each affected pre-European vegetation association and broader Interim Biogeographic Regionalisation for Australia sub-regions. In addition, the remaining native vegetation extents within various buffers from the Proposal boundary (10 km, 15 km and 20 km) will be reviewed. A review of impacts from other proposals and historic clearing within the local and regional extents of the Banksia Woodlands of the Swan Coastal Plain TEC/PEC and Priority Flora records.
	State-wide Pre-European extent	Flora and Vegetation	
	Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community (TEC)/Priority Ecological Community (PEC)	Flora and Vegetation	
	Priority flora and Significant flora habitat	Flora and Vegetation	
	Significant fauna habitat	Terrestrial Fauna	
	Carnaby's Black Cockatoo Foraging Habitat	Terrestrial Fauna	As above, plus a review of impacts from other proposals and historic clearing within a 40 km radius of the Proposal boundaries (likely maximum local range of roosting Carnaby's Black Cockatoo).
Abstraction of groundwater from the Yarragadee, Lesueur or	The Yarragadee aquifer Lesueur or Eneabba aquifers	Inland Waters	Impacts from other proposals within the Nambung groundwater subarea (part of the greater Jurien Groundwater Area) defined by the Department of Water and Environmental Regulation (DWER) in the Gingin Groundwater Area Allocation Plan (Department of Water, 2015).

Activities	Environmental values	Relevant factors	Boundaries
Eneabba aquifers.	GDEs	Flora and Vegetation Inland Waters	Cumulative impacts on GDEs will be assessed by reviewing other proposals that may impact GDEs within various buffers from the Proposal boundary (10 km, 15 km and 20 km).
Mining (excavation, ore handling, processing and export)	Amenity (Dust)	Social Surroundings	If the Proposal is likely to result in dust or noise above background levels at the nearest sensitive receptors then an assessment will be conducted to determine what other air pollution and noise impacts could be affecting that receptor. The Proposal's contribution to those cumulative impacts will then be assessed.
	Amenity (Noise)	Social Surroundings	
	Economic (Light spill)	Social Surroundings	Light emissions will be reviewed against the cumulative emissions within the shire of Gingin to determine the contribution made by the Proposal.

2.4 HOLISTIC IMPACT ASSESSMENT

The ERD will include a holistic impact assessment to assess the Proposal's contribution to impacts on relevant environmental values. Connection and interactions between the identified key environmental factors (outlined in Section 2.1) that have the potential to have a significant effect on the environment will be assessed, as well as any mitigation measures, significant residual impacts and environmental outcomes/ proposed conditions for consideration by the EPA.

2.5 OFFSETS

If the Proposal requires an offset due to significant residual impacts following the application of the mitigation hierarchy, details will be provided in the ERD, including, but not limited to:

- Objectives and outcomes;
- Description of actions to be undertaken;
- Specific and measurable success criteria;
- Timelines and milestones;
- Monitoring to assess offset implementation;
- Reporting details and timing;
- Financial arrangements;
- Risks and contingency measures;
- Governance arrangements including responsibilities and legal obligations;
- Provide evidence of consultation on offset with relevant stakeholders;
- Identify and quantify the significant residual impacts and proposed offsets, including completing the offset template (an example is in Appendix 1 of the WA Offsets Guidelines) and the residual impact significance model table (an example is on Page 11 of the WA Environmental Offsets Guideline) (EPA, 2014);
- Assess whether and how the proposed offset will counterbalance the significant residual impact;
- Demonstrate consideration of the six Principles outlined in the WA Environmental Offsets Policy (EPA, 2011) and WA Environmental Offset Guideline (EPA, 2014);
- Outline how the offset aligns with relevant plans and policies, such as recovery plans; and
- Evidence that supports the success or viability of the offset (include as an appendix where required).

2.6 STAKEHOLDER CONSULTATION

The proponent will consult with stakeholders who are affected by or are interested in the Proposal. This includes the decision-making authorities, other relevant state (and Commonwealth) government agencies and local government authorities, Traditional Owners, the local community and environmental non-government organisations.

The Commonwealth Government's central piece of environmental legislation, the EPBC Act, recognises that Indigenous peoples have an important role in the conservation and ecologically sustainable use of Australia's biodiversity and Indigenous heritage.

The 'Engage Early – Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act' (Department of the Environment, 2016) aims to improve how proponents engage and consult Indigenous peoples during the environmental assessment process under the EPBC Act. It provides guidance to project proponents on when Indigenous communities should be consulted (in addition to the statutory public comment periods required under Part 8 of the EPBC Act) and sets out DCCEEW's expectations on how Indigenous engagement should occur.

The proponent must document the following in the ERD:

- Identified stakeholders;
- The stakeholder consultation undertaken and the outcomes, including decision-making authorities' specific regulatory approvals and any adjustments to the proposal as a result of consultation; and
- Any future plans for consultation.

2.7 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act provides for the Commonwealth to accredit EPA assessments of proposals under Part IV of the EP Act. The following MNES has been identified by the DCCEEW for inclusion in the accredited environmental review:

- Listed threatened species and communities (s.18 & s.18A).

MNES that may be impacted by the Proposal are identified in Appendix A. Appendix A also outlines the EPBC Act survey guidelines or the equivalent EPA survey guidelines that will be used, the relevant statutory documentation (e.g., Recovery Plan, Conservation Advice) for each of the species, the relevant Threat Abatement Plans, and relevant other policy documents. Additional policy and guidance material that will be referred to in the ERD include:

a) Department of Agriculture, Water and the Environment (2021). Guide for providing maps and boundary data for EPBC Act projects. Canberra, ACT: Commonwealth of Australia. Available from: https://www.environment.gov.au/system/files/resources/5bb0509e-c4b5- 4f7a-910b-5b04d82db491/files/epbca-maps-data-guidelines.pdf;
b) DotE (2003). Criteria for Determining ESD Relevance. Commonwealth Department of Climate Change, Energy the Environment and Water, Canberra. Available from: https://www.dcceew.gov.au/sites/default/files/documents/esd-criteria- relevance.pdf;

c) DotE (2014). Environmental Management Plan Guidelines. Canberra, ACT: Commonwealth of Australia. Available from: https://www.agriculture.gov.au/sites/default/files/documents/environmental-management-plan-guidelines.pdf;
d) DSEWPaC (2012). *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy. Canberra, ACT: Commonwealth of Australia. Available from: 4c8e-815f-2d7862bf87e7/files/offsets-policy_2.pdf;
e) Commonwealth of Australia (2013) Survey Guidelines for Australia's Threatened Orchids, Guidelines for Detecting Orchids Listed as 'Threatened' under the *Environment Protection And Biodiversity Conservation Act 1999*. https://www.dcceew.gov.au/sites/default/files/documents/draft-guidelines-threatened-orchids.pdf;
f) DotE (2013). Policy Statement 1.1 Significant Impact Guidelines - Matters of National Environmental Significance or Significant Impact Guidelines 1.2, if applicable. Available from: https://www.dcceew.gov.au/environment/epbc/publications/significant- impact-guidelines-11-matters-national-environmental-significance;
g) DSEWPaC (2012a), EPBC Act Environmental Offsets Policy. Available from: https://www.dcceew.gov.au/sites/default/files/documents/offsets- policy_2.pdf;
h) DSEWPaC (2012b) Offset Assessment Guide. Available from: https://www.dcceew.gov.au/sites/default/files/documents/offset- assessment-guide.xlsm;
i) DSEWPaC, Translocation of listed threatened species policy statement. Available from: https://www.dcceew.gov.au/sites/default/files/documents/epbc-act-policy-translocation.pdf; and
j) DSEWPaC, (2013) Translocation of Listed Threatened Species Policy Statement. Available from: https://www.dcceew.gov.au/sites/default/files/documents/epbc-act-policy-translocation.pdf.

The ERD will identify:

- The source of information;
- How recent the information is;
- How the reliability of the information was tested; and
- What uncertainties (if any) are in the information.

The precautionary principle will be applied in the ERD if impacts are likely to be unknown, unpredictable or irreversible.

3 DECISION MAKING AUTHORITIES

Table 5 identifies the decision- making authorities (DMAs) that are responsible for regulating all or part of the Proposal.

To address requirements under the EPBC Act, the ERD will include further details about:

- What environmental assessment of the Proposal has been, or is being, carried out by the DMAs;
- How the State or Local Government approval provides for the prevention, minimisation and management of any relevant impacts;
- Any approval that has been or will be obtained from DMAs (other than an approval under the EPBC Act), including any conditions that apply to the Proposal; and
- A description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the Proposal.

Table 5: Decision Making Authorities

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	Relevant Key Environmental Factor and Objective	Can the DMA mitigate impacts and how will the EPA's factor be met?
Minister for Environment and Water (Cth) DCCEEW	EPBC Act	**s.133 Approval** - required for the assessment of the Proposal's impacts on Matters of National Environmental Significance	Direct impacts to Threatened Fauna	**Terrestrial Fauna** EPA's objective: *To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*	Partially While there is likely to be significant overlap in regulation, the EPBC Act is a Commonwealth Act and as such cannot be relied upon to regulate impacts under WA legislation. However, the Commonwealth can require separate offsets to mitigate impacts.
			Clearing of potential Threatened Flora or Fauna habitat	**Flora and Vegetation** DCCEEW's objective: T*o provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance.* **Terrestrial Fauna** DCCEEW's objective: T*o provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance.*	
			Environmental impacts associated with the storage and transport of radioactive materials.	**Terrestrial Fauna** DCCEEW's objective: T*o provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance* **Inland Waters** EPA's objective: *To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.*	

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
				Human Health EPA's objective: *To protect human health from significant harm.*	
Minister for Environment (WA) Chief Executive Officer (DWER)	Part V of the EP Act	**Works Approval** - required for the construction and commissioning of the WCP and Tailings Storage Facility and disposal of waste material back into the mine path. **Licence** - required for the operation of the WCP and Tailings Storage Facility and disposal of waste material back into the mine path.	Noise emissions	**Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	Yes Mineral Sands mining is a prescribed activity under Part V of the EP Act and therefore the design, construction and operation of the mine will be regulated under a works approval and licence to ensure noise emissions are minimised and do not result in significant impacts to any sensitive receptors.
			Dust emissions	**Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained* **Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	Yes Mineral Sands mining is a prescribed activity under Part V of the EP Act and therefore the design, construction and operation of the mine will be regulated under a works approval and licence to ensure dust emissions are minimised and do not result in significant impacts to any sensitive receptors. Dust emissions from the WCP and all other aspects of the site are regulated under the *Mining Act 1978* (WA; Mining Act) (refer below) and are not expected to be significant. These emissions are unlikely to require additional regulation under Part IV of the EP Act in order to meet the objective for this factor.
			Disposal of waste material back into mine path and unintentional discharge of potentially contaminated water (stormwater), hydrocarbons,	**Inland Waters** EPA's objective: *To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.*	Yes The Works Approval and Licence will regulate pollution of land or waters from the disposal of waste material or any spills of slimes or hydrocarbons within the MDE. Leaks and spills from all other aspects of the MDE are regulated under the Mining Act (refer below) and are not expected to be significant. These emissions are unlikely to require additional regulation under Part IV of the EP Act in order to meet the objective for this factor.

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
			and/or sand slimes	**Terrestrial Environmental quality** EPA's objective: *To maintain the quality of land and soils so that environmental values are protected* **Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained*	
Minister for Environment (WA) Chief Executive Officer (DBCA)	*Biodiversity Conservation Act 2016* (WA; BC Act)	**s.40 approval –** to take flora (where the flora to be taken is Threatened flora). **s. 45 approval** – to modify a TEC.	Clearing of potential Threatened Flora or TEC.	**Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained.* **Terrestrial Fauna** EPA's Objective: *To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*	Yes Species and ecological communities listed under the BC Act may differ from those listed in other states or territories, or under Commonwealth legislation. This is due to the different status of ecological communities in the different States and Territories and nationally. The BC Act provides the ability to impose conditions on authorisations to take Threatened species or modify TECs, that mitigate or offset the impact of such actions. DWER and DBCA coordinate assessment processes where a project being assessed under the EP Act involves the taking of a Threatened species or modification of an occurrence of a TEC. In accordance with longstanding agency practice, the assessment processes will be undertaken concurrently with advice being provided on the likelihood of an approval/permit being granted under the EP Act or an authorisation being granted under the BC Act.
Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972* (WA; AH Act)	**Application for a permit under Part 6 of the AH Act** - required for consent to impact	Disturbance of Aboriginal Heritage Sites	**Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	Yes. An application for a permit under the AH Act will assess the significance of the proposed disturbance and determine what mitigation measures are required to obtain consent for any disturbance to Aboriginal Heritage Sites. This consultation and assessment process

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
		any Aboriginal Heritage sites (if not able to be avoided)			will meet the EPA's objective for Social Surroundings by protecting registered Aboriginal Heritage sites from significant harm.
			Disturbance or indirect impacts to areas or artefacts of Aboriginal cultural value	**Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	No (if avoidance is not possible). If disturbance or indirect impacts within areas or artefacts of significant Aboriginal cultural value cannot be avoided then assessment and potential regulation under Part IV of the EP Act may be required.
Minister for Water Chief Executive Officer (DWER)	*Rights in Water and Irrigation Act 1914* (WA)	**Application for a 26D licence** - required for the construction of a bore to abstract groundwater. **Application for a 5C licence** - required for the abstraction of groundwater	Abstraction of groundwater from the Yarragadee, Lesueur or Leederville aquifers.	**Inland Waters** EPA's objective: *To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.*	Yes. A 26D licence ensures that bores are drilled, constructed and maintained appropriately to ensure the aquifer and the groundwater resource is not compromised. A 5C licence regulates the taking of water and assesses the impacts of the abstraction on the environment and other users. A 5C Licence is only granted if the impacts from the abstraction are shown to be sustainable with minimal environmental impacts or impacts to other users. Licence holders are obligated to comply with their resource allocation and any conditions included in the licence. Licence holders are also required to use water efficiently and responsibly, minimising impacts on the water resource. These licences will ensure the Proposal meets the EPA's objective for Inland Waters by maintaining the hydrological regime of groundwater. Regulation of the potential impacts on the environment from the drilling and abstraction of groundwater is therefore not expected to be required under Part IV of the EP Act.
Minister for Mines and Petroleum Executive Director	Mining Act	**Approval of a Mining Proposal (MP) and MCP** - required for any mining related	Changes to the stability of the landscape	**Terrestrial Environmental Quality** EPA's objective: *To maintain the quality of land and soils so that environmental values are protected*	Yes. Approval of a MP and MCP will ensure that the Factors defined in DEMIRS's Environmental Objectives - Policy and Mining (DMIRS, 2020) are met for the Proposal. A MP will be submitted to DEMIRS prior to any disturbance at the Proposal and will include auditable outcomes

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	Relevant Key Environmental Factor and Objective	Can the DMA mitigate impacts and how will the EPA's factor be met?
Resource and Environmental Compliance (DEMIRS) State Mining Engineer, (DEMIRS)		disturbance within Mining Act tenements (i.e. all works apart from road intersection works).		**Inland Waters** EPA's objective: *To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.* **Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained* **Terrestrial Fauna** EPA's objective: *To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*	for the key DEMIRS factors (Biodiversity, Water Resources, Land and Soils). These outcomes will be defined and approved by DEMIRS to ensure that the impacts on the key DEMIRS factors are mitigated to an acceptable level. In the context of landscape stability this will include an auditable outcome that the landscape will be safe and stable during mining to prevent slumps or collapsed walls which could have environmental impacts. A MCP must be submitted to DEMIRS with the MP prior to any disturbance at the Proposal and is required to be revised every three years. It will include auditable closure and rehabilitation outcomes and criteria which will be defined and approved by DEMIRS to ensure that impacts on key DEMIRS factors are mitigated to an acceptable level. In the context of landscape stability this will include an auditable outcome that the landscape will be safe, stable and non-polluting post-closure to prevent landform subsidence which could have environmental impacts. The implementation of the MP and MCP under the Mining Act is considered suitable to mitigate this impact such that the EPA's objectives can be met. By meeting DEMIRS's Factors, the Proposal will also meet the EPA's objectives for the relevant factors. Additional regulation under Part IV of the EP Act is therefore unlikely to be required for this potential impact.
			Clearing of native vegetation	**Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained* **Terrestrial Fauna** EPA's objective: *To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*	Partially. A MP will be submitted to DEMIRS prior to any disturbance at the Proposal and will include auditable outcomes for the key DEMIRS factor: Biodiversity. These outcomes will include requirements for best-practice topsoil stripping and storage, minimising the clearing footprint and taking accurate records. A MCP must be submitted to DEMIRS with the MP prior to any disturbance at the Proposal and is required to be revised every three years. It will include auditable closure and rehabilitation outcomes and criteria which will be defined and approved by DEMIRS to ensure that

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
					cleared areas are rehabilitated to an acceptable level. In the context of vegetation clearing this will include an auditable outcome that the rehabilitated areas will meet specific closure criteria designed to ensure flora, vegetation and fauna values are reinstated. The implementation of the MP and MCP under the Mining Act is considered suitable to mitigate rehabilitation and impacts during clearing however, it is not considered suitable to mitigate impacts associated with the loss of vegetation. This is expected to require assessment under Part IV of the EP Act to ensure that the EPA's objectives can be met.
			Introduction and spread of weeds	**Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained*	Yes. The DEMIRS Factor: Biodiversity, is relevant to this impact. DEMIRS's objective for this factor is to: *Maintain representation, diversity, viability and ecological function at the species, population and community level.* By meeting the objective of DEMIRS's Biodiversity Factor, the Proposal will also meet the EPA's objectives for flora and vegetation. Therefore, further assessment of the impact of the introduction and spread of weeds on Flora and Vegetation is not required to be assessed by the EPA.
			Alteration to the post mining land use	**Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	Yes. The DEMIRS Factor: Rehabilitation and Mine Closure, is relevant to this impact. DEMIRS's objective for this factor is: *Mining activities are rehabilitated and closed in a manner to make them physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting / non-contaminating, and capable of sustaining an agreed post-mining land use, and without unacceptable liability to the State.* By meeting the objective of DEMIRS's Rehabilitation and Mine Closure Factor, the Proposal will also meet the EPA's objectives for social surrounding that are relevant to this impact. Additional regulation

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
					under Part IV of the EP Act is therefore unlikely to be required for this potential impact.
	Work Health and Safety (Mines) Act 2020	**Approval of a Radiation Management plan** – required when thorium and uranium ores are mined and when members of the public and employees are likely to be exposed to doses higher than the dose limits set out in the Work Health and Safety (Mines) Regulations (2022).	Radiation exposure to employees and members of the public	**Human Health** EPA's objective: To protect human health from significant harm.	Yes Potential radiation associated with mineral sands mining will be managed in accordance with relevant guidelines and codes of practice published by the Australian Radiation Protection and Nuclear Safety Authority and subject to control under Chapter 10, Division 3 of the Work Health and Safety (Mine) Regulations 2022. The site will also be registered with the Radiological Council WA under Section 28 of the *Radiation Safety Act 1975* (WA). Through the implementation of the Radiation Management Plan the Proposal will also meet the EPA's objective for Human Health. Therefore, further assessment of the impact of radiation exposure to members of the public is not required to be assessed by the EPA.
Minister for Mines and Petroleum Chief Dangerous Goods Officer, (DEMIRS)	*Dangerous Goods Safety Act 2004* (WA)	**Dangerous Goods Licence** - may be required for the bulk storage of fuel if above specified limits (unlikely)	**Dangerous Goods Licence** - may be required for the bulk storage of fuel if above specified limits (unlikely)	**Terrestrial Environmental Quality** EPA's objective: *To maintain the quality of land and soils so that environmental values are protected* **Inland Waters** EPA's objective: *To maintain the hydrological regimes and quality of groundwater and surface water so*	Yes. The storage and management of hydrocarbons will already be regulated under Part V of the EP Act and the MP / MCP however, the Dangerous Goods Licence provides additional mitigation for the design and storage of larger volumes of dangerous goods (if large volumes of hydrocarbons (>100,000 L) are required to be stored on site). A Dangerous Goods Licence sets standards for the way in which dangerous goods are stored on site. These standards are aimed at ensuring dangerous goods are stored safely and in such a way that will

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
			Fire (combustion of stored fuel)	*that environmental values are protected.* **Flora and Vegetation** EPA's objective: *To protect flora and vegetation so that biological diversity and ecological integrity are maintained* **Terrestrial Fauna** EPA's objective: *To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*	not result in impacts to the environment. A Dangerous Goods Licence ensures potential spills and combustion risks from the Proposal are mitigated. A Dangerous Goods licence (in combination with the Part V and Mining Act approvals) will meet the objectives of the EPA for both factors by minimising the risk of contamination of soils and water, and protecting flora and vegetation, and terrestrial fauna by minimising the risk of fire. Regulation of the potential impacts on the environment from the storage of dangerous goods is therefore not expected to be required under Part IV of the EP Act.
Chief Executive Officer, Shire of Gingin	*Local Government Act 1995* (WA) *Planning and Development Act 2006* (WA)	**Planning / Development Approval** - required for the development of works outside of Mining Act tenements	Noise emissions Dust emissions	**Social Surroundings** EPA's objective: *To protect social surroundings from significant harm.*	No. A development approval is only required for works outside of Mining Act tenure. This process considers the impacts from small portions of the Proposal to an extent but does not regulate emissions from the Proposal. Potential impacts including emissions of Noise and Dust are regulated under Part V of the EP Act and are discussed further in the section above.

Decision-making authority and department (if relevant)	Legislation or Agreement regulating the activity	Approval required and relevant proposal element	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)		
			Relevant Impact	**Relevant Key Environmental Factor and Objective**	**Can the DMA mitigate impacts and how will the EPA's factor be met?**
Radiological Council of Western Australia	*Radiation Safety Act 1975 (WA)*	**Registration with the Radiological Council WA –** required under Section 28 of the *Radiation Safety Act 1975* (WA) for the owner of any premises which is likely to be affected by the passage or use of any radioactive substance.	Radiation exposure to members of the public	**Human Health** EPA's objective: *To protect human health from significant harm.*	Yes The site will be registered with the Radiological Council WA under Section 28 of the *Radiation Safety Act 1975* (WA). Potential radiation associated with mineral sands mining will be managed in accordance with relevant guidelines and codes of practice published by the ARPANSA, the *Radiation Safety Act 1975,* and subject to control under Part 16 of the Mines Safety and Inspection Regulations 1995. Any radioactive sealed sources and x-ray equipment at the project are to be regulated solely under the *Radiation Safety Act 1975* and additional requirements under the Act will apply. Through the implementation of the Radiation Management Plan the Proposal will also meet the EPA's objective for Human Health. Therefore, further assessment of the impact of radiation exposure to members of the public is not required to be assessed by the EPA.

4 GLOSSARY

Term	Definition
AH Act	*Aboriginal Heritage Act 1972*
ASS	Acid Sulphate Soils
BC Act	*Biodiversity Conservation Act 2016*
Cth	Commonwealth
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DBCA	Department of Biodiversity, Conservation and Attractions
DE	Development Envelope
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DoE	Department of Environment
DotE	Department of the Environment
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EIA	Environmental impact assessment
EIDE	External Infrastructure Development Envelope
EMS	Environmental Management System
EP Act	*Environmental Protection Act* 1986 (WA)
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ERD	Environmental Review Document
ESD	Environmental Scoping Document
GDE	Groundwater Dependant Ecosystems
HMC	Heavy mineral concentrate
IBSA	Index of Biodiversity Surveys for Assessments
Image	Image Resources NL
km	Kilometres
MCP	Mine Closure Plan
MDE	Mine Development Envelope
Mining Act	*Mining Act 1978*
MNES	Matters of National Environmental Significance
MP	Mining Proposal
MW	Megawatt
PEC	Priority Ecological Community
Proposal	Bidaminna Project
SRE	Short Range Endemic
TEC	Threatened Ecological Community
WA	Western Australia
WCP	Wet Concentrator Plant

REFERENCES

Department of Agriculture, Water and the Environment (2022a). *Habitat Quality Survey Tool*. Commonwealth of Australia.

Department of Agriculture, Water and the Environment (DAWE) (2022b). *Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo* (Zanda latirostris), *Baudin's Cockatoo* (Zanda baudinii) *and the Forest Red-tailed Black-cockatoo* (Calyptorhynchus banksii naso). Commonwealth of Australia.

Department of Biodiversity, Conservation and Attractions (2017). *A methodology for the evaluation of wetlands on the Swan Coastal Plain*. Western Australia, December 2017

Department of Mines, Industry Regulation and Safety (2020). *Statutory Guidelines for Mine Closure Plans*. Government of Western Australia.

Department of Mines, Industry Regulation and Safety (2021). *Mine Closure Completion Guideline*. Government of Western Australia

Department of Sustainability, Environment, Water, Population and Communities (2011). *Survey guidelines for Australia's threatened reptiles.* Commonwealth of Australia.

Department of Sustainability, Environment, Water, Population and Communities (2012). *EPBC Act Environmental Offsets Policy.* Commonwealth of Australia.

Department of the Environment (2006). *Air Quality Modelling Guidance Notes*. Canberra, Australia.

Department of the Environment (2016). Engage Early – Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act. Canberra, Department of the Environment.

Department of the Environment and Energy (2018). *Threat Abatement plan for disease in natural ecosystems caused by* Phytophthora cinnamomi. Canberra, Australia.

Department of the Environment, Water, Heritage and the Arts (2010). *Survey guidelines for Australia's threatened birds.* Commonwealth of Australia.

Department of Water (2015). *Gingin Groundwater Area Allocation Plan*. Western Australia.

Environmental Protection Authority (2005). *Guidance Statement 3: Separation Distances between Industrial and Sensitive Land Uses.* Joondalup, Western Australia.

Environmental Protection Authority (2011). *WA Environmental Offsets Policy*. Environmental Protection Authority, Joondalup, Australia.

Environmental Protection Authority (2014). *WA Offsets Guidelines*. Government of Western Australia.

Environmental Protection Authority (2016a). *Environmental Factor Guideline. Flora and Vegetation*. Environmental Protection Authority, Joondalup, Australia.

Environmental Protection Authority (2021a). *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2021*. Environmental Protection Authority, Joondalup, Australia.

Environmental Protection Authority (2021b). *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures*. Environmental Protection Authority, Joondalup, Australia.

Environmental Protection Authority (2021c). *How to prepare an Environmental Review Document – Instructions.* Environmental Protection Authority, Joondalup, Australia.

Environmental Protection Authority (2021d). *How to prepare an Environmental Review Document – Template.* Environmental Protection Authority, Joondalup, Australia.

Queensland Government (2021). *Using monitoring data to assess groundwater quality and potential environmental impacts.* Queensland Government.

APPENDIX A: EPBC ACT MATTERS POTENTIALLY IMPACTED BY THE ACTION

Based on the information available in the referral, the proposed action may have, or is likely to have, a significant impact on the MNES - Listed threatened species and communities (sections 18 & 18A).

The following table outlines the information that must be considered in surveying and assessing impacts to these matters.

The list of species in the table below should be assessed as a minimum but is not considered to be exhaustive. Equivalent survey and assessment considerations should be applied to any additional EPBC Act listed threatened species or ecological communities or migratory species discovered or suspected of occurring at the project site.

Table 1: Listed threatened species and communities (sections 18 & 18A)

Notes:

- The availability, currency and status of Recovery Plans, Threat Abatement Plans and Approved Conservation Advices (ACA) was current at time of writing but should be reviewed up to the point of submitting assessment documentation as changes do occur.
- Listed references should not be relied upon as complete or exhaustive.
- References in this table are not included in the reference list in the 'References' section.

Listed threatened species and communities (sections 18 & 18A)	Recovery Plan[1]	Threat Abatement Plan[1]	Approved Conservation Advice[1, 3]	Listing advice[3]	Bioregional Plan [2]	Survey Guidelines[2]	Other references [2]
Terrestrial Fauna							
Carnaby's Cockatoo (*Zanda latirostris*).	Department of Parks and Wildlife (DPaW;, 2013). Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan.	No Threat Abatement Plan has been identified as being relevant for this species	There is no ACA for this species	There is no Listing Advice for this species	Northern, Central and Southern Forest Regional Management Plans	Survey Guidelines for Australia's Threatened Birds, DEWHA (2010).	Revised draft referral guidelines for three black cockatoo species (Department of the Environment and Energy; DotEE, 2017)

Listed threatened species and communities (sections 18 & 18A)	Recovery Plan[1]	Threat Abatement Plan[1]	Approved Conservation Advice[1, 3]	Listing advice[3]	Bioregional Plan [2]	Survey Guidelines[2]	Other references [2]
Western Swamp Tortoise (*Pseudemydura umbrina*)	Department of Environment and Conservation (DEC; 2010). Western Swamp Tortoise (*Pseudemydura umbrina*) Recovery Plan.	DotEE (2017). Threat abatement plan for predation, habitat degradation, competition, and disease transmission by feral pigs. DEWHA (2008). Threat abatement plan for predation by the European red fox.	There is no ACA for this species	Threatened Species Scientific Committee (2004). Commonwealth Listing Advice on *Pseudemydura umbrina* (Western Swamp Tortoise);	Northern, Central and Southern Forest Regional Management Plans	Survey Guidelines for Australia's Threatened Reptiles (DEWHA, 2011).	N/A
Chuditch (*Dasyurus geoffroii*)	DEC (2012). Chuditch (*Dasyurus geoffroii*) Recovery Plan.	DotE (2015). Threat abatement plan for predation by feral cats. DotEE (2016). Threat abatement plan for competition and land degradation by rabbits. DEWHA (2008). Threat abatement plan for predation by the European red fox.	There is no ACA for this species	There is no Listing Advice for this species	Northern, Central and Southern Forest Regional Management Plans	Survey Guidelines for Australia's Threatened Mammals, DEWHA (2011)	N/A
Flora and Vegetation							
Banksia Woodlands of the Swan Coastal Plain ecological community	There is no adopted or made Recovery Plan for this ecological community.	DotEE (2018). Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi*.	DotEE (2016). Approved Conservation Advice Banksia Woodlands of the Swan Coastal Plain ecological community.	Listing assessment information may be available in the Approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	N/A	DBCA (2023). Methods for Survey and Identification of Western Australian Threatened Ecological Communities.

Listed threatened species and communities (sections 18 & 18A)	Recovery Plan[1]	Threat Abatement Plan[1]	Approved Conservation Advice[1, 3]	Listing advice[3]	Bioregional Plan [2]	Survey Guidelines[2]	Other references [2]
Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community	There is no adopted or made Recovery Plan for this ecological community	No Threat Abatement Plan has been identified as being relevant for this ecological community	DotEE (2019). Approved Conservation Advice Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community.	Listing assessment information may be available in the approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	N/A	DBCA (2023). Methods for Survey and Identification of Western Australian Threatened Ecological Communities.
Slender Andersonia (*Andersonia gracilis*)	DEC (2008). Slender Andersonia (*Andersonia gracilis*) Recovery Plan.	Department of the Environment and Energy (2016). Threat abatement plan for competition and land degradation by rabbits. Department of the Environment and Energy (2018). Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomic.	There is no ACA for this species	There is no Listing Advice for this species	Swan Coastal Plain SWA02 Perth Reserve System Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (2023). Department of Environment and Conservation (DEC).
Dwarf Green Kangaroo Paw (*Anigozanthos viridis* subsp. *terraspectans*)	There is no adopted or made Recovery Plan for this species	No Threat Abatement Plan has been identified as being relevant for this species	DEWHA (2008). Approved Conservation Advice Dwarf Green Kangaroo Paw (*Anigozanthos viridis* subsp. *terraspectans*).	Listing assessment information may be available in the approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (DEC, 2023).
Glossy-leaved Hammer Orchid (*Drakaea elastica*)	DEC (2009). Glossy-leafed Hammer Orchid (*Drakaea elastica*) Recovery Plan.	DotEE (2016). Threat abatement plan for competition and land degradation by rabbits.	There is no ACA for this species	There is no Listing Advice for this species.	Northern, Central and Southern Forest Regional Management Plans	Draft survey guidelines for Australia's threatened orchids (DotE, 2013) [Admin Guideline].	N/A

Listed threatened species and communities (sections 18 & 18A)	Recovery Plan[1]	Threat Abatement Plan[1]	Approved Conservation Advice[1, 3]	Listing advice[3]	Bioregional Plan [2]	Survey Guidelines[2]	Other references [2]
Sandplain Duck Orchid (*Paracaleana dixonii*).	There is no adopted or made Recovery Plan for this species	No Threat Abatement Plan has been identified as being relevant for this species	DEWHA (2008c). Approved Conservation Advice for *Paracaleana dixonii* Hopper & A.P.Br. nom. inval. (Sandplain Duck Orchid). Canberra.	Listing assessment information may be available in the approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	Draft survey guidelines for Australia's threatened orchids (DotE, 2013) [Admin Guideline].	N/A
Keighery's Macarthuria (*Macarthuria keigheryi*)	DEC (2009). Keighery's Macarthuria (*Macarthuria keigheryi*) Recovery Plan.	DotEE (2016). Threat abatement plan for competition and land degradation by rabbits.	There is no ACA for this species.	There is no Listing Advice for this species.	Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (DEC, 2023).
Keighery's Eleocharis (*Eleocharis keigheryi*)	There is no adopted or made Recovery Plan for this species.	No Threat Abatement Plan has been identified as being relevant for this species.	DEWHA (2008). Approved Conservation Advice Keighery's Eleocharis (*Eleocharis keigheryi*).	Listing assessment information may be available in the approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (DEC, 2023).
Narrow curved-leaf Grevillea (*Grevillea curviloba* subsp. *incurva*)	Department of Conservation and Land Management Threatened Species and Communities Unit (2000). Narrow curved-leaf	DotEE (2016). Threat abatement plan for competition and land degradation by rabbits.	DotE (2016). Approved Conservation Advice Narrow curved-leaf Grevillea (*Grevillea curviloba* subsp. *incurva*).	Listing assessment information may be available in the approved Conservation Advice	Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (DEC, 2023).

Listed threatened species and communities (sections 18 & 18A)	Recovery Plan[1]	Threat Abatement Plan[1]	Approved Conservation Advice[1, 3]	Listing advice[3]	Bioregional Plan [2]	Survey Guidelines[2]	Other references [2]
Dwarf Pea (*Ptychosema pusillum*).	There is no adopted or made Recovery Plan for this species.	No Threat Abatement Plan has been identified as being relevant for this species	DEWHA (2008). Approved Conservation Advice Dwarf Pea (*Ptychosema pusillum*).	Listing assessment information may be available in the approved Conservation Advice.	Northern, Central and Southern Forest Regional Management Plans	EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016).	Significant Flora Monitoring Program (DEC, 2023).