



Environmental
Protection
Authority

Jimblebar Hub Significant Amendment

BHP Iron Ore Pty Ltd

Report 1793

October 2025

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA). It describes the outcomes of the EPA's assessment of the Jimblebar Hub Significant Amendment proposal by BHP Iron Ore Pty Ltd.

This assessment report is for the Western Australian Minister for the Environment and sets out:

- what the EPA considers to be the key environmental factors identified in the course of the assessment
- the EPA's recommendations as to whether or not the proposal may be implemented and, if it recommends that implementation be allowed, the conditions and procedures, if any, to which implementation should be subject
- other information, advice and recommendations as the EPA thinks fit.



Darren Walsh

Chair

Environmental Protection Authority

24 September 2025

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Summary

Proposal

The Jimblebar Hub Significant Amendment (the proposal) is a significant amendment to expand and amalgamate existing BHP Iron Ore Ltd (the proponent) iron ore operations by developing new below water table areas in order to sustain mining at the Jimblebar Hub.

The proposal is located approximately 40 kilometres (km) east from Newman, in the Pilbara region of Western Australia (Figure 1). The proposal is on the traditional lands of the Niyaparli People.

The proposal includes the development of a new below water table mining deposit, new beneficiation plant, and extensions to existing operations and supporting infrastructure, including new overburden storage areas (OSAs), haul and access roads, pipelines and overland conveyor.

Context

The proposal is located on the boundary between the Pilbara and Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) regions. Most of the development envelope is covered by the Fortescue and Hamersley subregions, with the southern portion of the development envelope occurring within the Augustus subregion. The proposal is within the ephemeral Jimblebar Creek and Caramulla Creek catchment areas in the Upper Fortescue River Basin.

The proposal overlaps wholly with the Niyaparli Native Title Determinations (WCD 2018/008). The Traditional Owners are represented by the Karlka Niyaparli Aboriginal Corporation (KNAC). The proponent has an ongoing relationship with the Niyaparli Traditional Owners which is formalised through a Comprehensive Agreement and associated registered Indigenous Land Use Agreement (ILUA).

Consultation

The Environmental Protection Authority (EPA) published the proponent's referral information for the proposal on its website for seven days public comment from 9 January 2024 to 15 January 2024. The EPA also published the proponent's environmental review document (ERD) on its website for public review for four weeks from 24 February to 24 March 2025. The proponent provided the EPA a response to submissions (RTS) document. The EPA considered the comments received during these public consultation periods in its assessment.

Assessment of key environmental factors

The EPA has identified the key environmental factors (listed below) in the course of the assessment. For each factor, the EPA has assessed the residual impacts of the proposal on the environmental values and considered whether the environmental outcomes are likely to be consistent with the EPA environmental factor objectives.

As the proposal is a significant amendment to an existing proposal the EPA's assessment has been undertaken in the context of the existing proposal, having regard to the combined and cumulative effects on the environment. The EPA has

also considered whether to inquire into the implementation conditions for the existing proposal.

Flora and Vegetation

Residual impact or risk to environmental value	Assessment finding or Environmental outcome (choose which one to use)
1. Clearing of up to 2,067 ha of native vegetation of which 1,864 ha is in 'Good' to 'Excellent' condition within the conceptual footprint. The combined effect of the approved proposals and significant amendment is the loss of 12,262 ha of native vegetation of which 6,521 ha is in 'Good' to 'Excellent' condition.	The clearing of 'Good' to 'Excellent' condition vegetation within and immediately adjacent to the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species. The EPA advises that subject to limitations on clearing (condition A1-1 and B1-1), and recommended conditions requiring progressive rehabilitation (B6) and offsets (B8), the significant residual impact can be counterbalanced, so that the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.
2. The significant amendment will result in the loss of priority flora: • up to 13% of known individuals of <i>Eremophila capricornica</i> (P1) • up to 0.05% of known individuals of <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3) • up to 3% of known individuals of <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3) • up to 0.44% of known individuals of <i>Hibiscus</i> aff <i>campanulatus</i> (undetermined, but likely a P1).	The significant amendment will have residual impacts on <i>Eremophila capricornica</i> (P1), <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3), <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3) and <i>Hibiscus</i> aff <i>campanulatus</i> (undetermined). The EPA advises that the proposal should be subject to conditions (B1-1, B1-2, B1-3 and B1-4) to protect any remaining individuals of priority flora within and immediately outside of the development envelope. The EPA considers that implementation of the recommended conditions will ensure that the environmental outcome is likely to be consistent with the EPA's objective for this factor.
3. Clearing of 0.8 ha of riparian vegetation.	The clearing of riparian vegetation within the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species. The EPA advises that subject to recommended conditions (A1- 1, B1-1, B8) requiring limitations on clearing and offsets, the significant residual impact can be

		counterbalanced, so that the environmental outcome is likely to be consistent with the EPA objective for flora and vegetation.
4.	Indirect impacts to <i>Acacia corusca</i> .	The EPA advises that no residual direct impact to <i>Acacia corusca</i> is anticipated and the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.
5.	Indirect impacts associated with the introduction/spread of weeds and altered hydrological regimes.	The EPA advises that the potential indirect impacts to flora and vegetation represents a residual impact. The EPA considers that the residual impact can be minimised appropriately through the implementation of conditions (B1-4 and B1-6), and this will ensure the outcome is likely to be consistent with the EPA's objective for flora and vegetation.

Terrestrial Fauna

Residual impact or risk to environmental value		Assessment finding or Environmental outcome (choose which one to use)
1.	Direct impact to the following threatened fauna habitat types: • 2.5 ha of breakaway/cliff habitat • 7.6 ha of gorge/gully habitat.	The EPA considers the loss of conservation significant habitat for northern quoll is a significant residual impact. The EPA advises that with limits of clearing fauna habitat types and avoidance of impacts through the application of mining exclusion zones, the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna. The significant residual impacts are also expected to be counterbalanced by offsets.
2.	Indirect impacts to conservation significant fauna through feral fauna predation/ competition, weed invasion, dust, vehicle strike and collision with barbed wire fence.	The proposal has the potential to result in indirect impacts on threatened fauna and habitat through feral fauna predation/ competition, weed invasion, dust, vehicle strike and collision with barbed wire fence. The EPA considers active management is required to mitigate these impacts and recommended reasonable implementation conditions to ensure that the environmental outcome is consistent with the EPA objective for this factor.

Inland Waters

Residual impact or risk to environmental value		Assessment finding or Environmental outcome (choose which one to use)
1.	Groundwater drawdown abstraction.	The drawdown associated with groundwater abstraction for mine pit dewatering is not expected to impact significant environmental values or other nearby licensed bore users. The EPA advises that subject to recommended conditions and regulation under RiWI Act, the environmental outcome is likely to be consistent with the EPA objective for inland waters.
2	Groundwater Quality (Seepage)	Surplus dewater discharge (from mine pit dewatering of OB31) to Ophthalmia Dam and Orebody 18 (Ninga) MAR scheme has the potential to cause groundwater quality changes in Ethel Gorge aquifer that supports the Ethel Gorge TEC. The EPA advises that subject to recommended conditions of maintaining groundwater levels, and water quality in the Ethel Gorge aquifer combined with regulation under Pt V for in-pit tailings, and surplus water discharge to MARs, creeks and Ophthalmia Dam, the environmental outcome is likely to be consistent with the EPA objective for inland waters.
3	Indirect impacts to surface water pools from changes in surface water catchment.	The potential residual impacts relate to ephemeral surface water flow regimes. The EPA is of the view that potential impacts are minor and that subject to the recommended condition (no impacts to Innawally Pool) combined with ongoing monitoring and management, the environmental outcome is likely to be consistent with the EPA objective for inland waters.
4	Mine Pit Lakes (AMD)	The potential residual impacts relate to change to groundwater quality as a result of post-closure mine pit lakes. The EPA considers that, subject to the implementation of the recommended condition B6, requiring the revision and implementation the MCP, the environmental outcome is likely to be consistent with the EPA objective for inland waters.

Subterranean Fauna

Residual impact		Assessment finding
1.	Direct loss of individuals or reduction in stygofauna habitat.	The proposal will result in the loss of subterranean fauna habitat as a result of proposal implementation. The EPA considered that the proposal is unlikely to have significant impacts on subterranean fauna from the reduction in habitat through mining and groundwater drawdown. The EPA considers that, subject to recommended condition A1-1 which limits total abstraction volume and impacts to stygofauna habitat beyond that which has been predicted, as well as continue to manage potential impacts in accordance with the EPWRMP, the environmental outcome is likely to be consistent with the EPA's objectives.
2.	Indirect loss of subterranean fauna habitat and individuals.	Degradation of habitat from changes in surface hydrology, changes to structure and presence of underground voids, fragmentation of habitat, groundwater mounding and contamination of water and soil are unlikely to have a significant residual impact to subterranean fauna. The EPA advises that subject to DMA regulation the environmental outcome is likely to be consistent with the EPA factor objective for subterranean fauna.

Greenhouse Gas Emissions

Residual impact or risk to environmental value		Assessment finding or Environmental outcome (choose which one to use)
1.	Scope 1 emissions are expected on average to be 352,748 t CO₂-e per annum (up to a maximum of 394,241 t CO₂-e per annum) and reduce to net zero by 2050. There are no scope 2 emissions associated with this proposal. Scope 3 GHG emissions are estimated to be up to 56,770,254 t CO₂-e per annum.	The proponent has adopted avoidance and mitigation measures to reduce GHG emissions at commencement of the significant amendment. Benchmarking against other iron ore mining operations indicates the emissions intensity is better than other existing comparable facilities. Scope 1 emissions from the significant amendment and combined proposal, except those associated with vegetation clearing, are covered by the Safeguard Mechanism.

		The EPA recognises that the Commonwealth Safeguard Mechanism requires the proponent to take actions to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. GHG emissions associated with vegetation clearing area well below 100,000 t CO₂-e per annum (annual maximum (peak) 367 t CO₂-e). The EPA notes that offsets are likely to meet the emissions reduction trajectory and considers that the proponent has undertaken due diligence and its proposed portfolio of offsets, The EPA considers that the proponent has implemented measures to reduce scope 3 emissions, however considers that further opportunities are expected to arise. The EPA encourages the proponent to take all reasonable measures to reduce scope 3 emissions. The EPA is of the view that emissions reductions required under the Safeguard Mechanism represent an as far as practicable reduction of the proposal's scope 1 GHG emissions, and therefore the likely environmental effects of the proposal can be mitigated to achieve consistency with the environmental factor objective for GHG emissions. The EPA has recommended a condition B4 that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism.
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Social Surroundings

Residual impact or risk to environmental value		Assessment finding or Environmental outcome (choose which one to use)
1.	Direct impacts to Aboriginal cultural heritage values.	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage values associated with disturbance to heritage sites or features. The EPA advises that this residual impact should be subject to recommended condition B5-1 to ensure impacts to Aboriginal heritage sites are avoided unless consent is granted through another

		decision-making process in consultation with the Traditional Owners. The EPA considers that subject to regulation by other decision-making processes and the recommended conditions, the environmental outcome is likely to be consistent with the EPA objective for social surroundings.
2.	Loss of Aboriginal cultural heritage.	The EPA advises that there is a residual impact to Aboriginal cultural heritage through the loss of plants and animals of cultural significance and restriction of access to use of land and flora and vegetation for traditional activities within the development envelope. The EPA advises that this residual impact should be subject to conditions (recommended condition B5-1) to ensure ongoing access to the land and flora used for cultural purposes, subject to reasonable health and safety requirements. The EPA concludes that implementation of the recommended condition would ensure consistency with the EPA objective for social surroundings.
3.	Visual and landscape impacts to Aboriginal cultural heritage	The proposal would result in permanent changes to the landforms and general landscape. Waste rock landforms, pit voids and pit lakes would remain as permanent changes to the landscape. The EPA recommends condition B5-4 to ensure that final landforms are designed in consultation with the relevant Traditional Owners to minimise impacts to cultural values. The EPA concludes that implementation of the conditions would ensure consistency with the EPA objective for social surroundings.

Holistic assessment

The EPA considered the connections and interactions between relevant environmental factors and values to inform a holistic view of impacts to the whole environment. The EPA formed the view that the holistic impacts would not alter the EPA's conclusions about consistency with the EPA factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal,

- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant),
- likely environmental outcomes which can be achieved with the imposition of conditions,
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors,
- EPA's confidence in the proponent's proposed mitigation measures,
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment, and
- principles of the *Environmental Protection Act 1986*.

The EPA has recommended that the proposal may be implemented subject to conditions recommended in Appendix A.

1 Proposal

The Jimblebar Hub Significant Amendment (the proposal) is located approximately 40 kilometres (km) east from Newman, in the Pilbara region of Western Australia (see Figure 1). The proposal is on the traditional lands of the Nyiyaparli People.

The significant amendment includes the extension and development of a new below water table mining deposit, new beneficiation plant, and extensions to existing operations and supporting infrastructure, including:

- new above and below water table mining at the proposed East Jimblebar deposit
- new overburden storage areas (OSAs) north of East Jimblebar
- new haul and access roads, pipelines, overland conveyor and associated infrastructure
- new beneficiation plant at Jimblebar and associated short-term in-pit tailings storage facilities (TSFs) within Orebody 17 and 18 and long term in-pit TSFs at Orebody 31, Jimblebar South and Jimblebar (Wheelara)
- an increase in mine dewatering and surplus water at the Jimblebar mine (from the approved Wheelarra Hill, South Jimblebar and Hashimoto deposits) and the proposed East Jimblebar deposit.

The significant amendment includes an additional 2,067 ha of clearing of native vegetation and an increase in the development envelope of 5,393 ha. This would increase total clearing to 12,262 ha within a development envelope of 24,684 ha.

Proposal elements of the significant amendment include mine pit excavation (above and below the water table), increased groundwater abstraction and discharge, continued surplus water discharge to Ophthalmia Dam, creeks and aquifers, ore and topsoil stockpiles, waste management, processing and transport infrastructure, including ancillary and other supporting infrastructure.

In addition, existing proposals authorised under Jimblebar Optimisation Project (Ministerial Statement (MS) 1126), Orebody 18 Iron Ore Mine (MS 439, amended by MS 1012), and Orebody 31 Iron Ore Mine (MS 1021) are to be amalgamated and consolidated into the proposal (Figure 3). The addition of the significant amendment to the approved proposals and the existing operations have been taken into account during assessment. A new consolidated ministerial statement will be published with conditions that consolidate and modernise the existing operations.

The proponent for the proposal is BHP Iron Ore Pty Ltd (the proponent). The proponent referred the proposal to the EPA on 19 December 2023. The referral information was published on the EPA website for seven days public comment. On 14 February 2024, the EPA decided to assess the proposal at the level Referral Information with addition information required. The EPA also published the environmental review document (BHP 2025a) and additional information on its website for public review for 4 weeks (from 24 February 2025 to 24 March 2025).

The proposal is set out in section 2 of the proponent's ERD (BHP 2025a) which is available on the EPA website.

The elements of the proposal which have been subject to the EPA's assessment are included in Table 1.

Table 1: Proposal content (BHP 2025a)

Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
<i>Physical elements</i>			
Mines and associated infrastructure	Part IV approved Clearing of no more than 10,195 ha of native vegetation within the total approved proposal boundary area of 19,291 ha: <i>Jimblebar MS 1126</i> Clearing of no more than 6,902 ha of native vegetation within the development envelope of 14,206 ha <i>Orebody 31 MS 1021</i> Clearing of no more than 2,500 ha of native vegetation within a Mine Development Envelope of 4,075 ha <i>Orebody 18 MS 439</i> Not more than 793 ha within the 1010 ha Maximum Disturbance Boundary	Additional clearing of 2,067 ha of native vegetation Additional development envelope area of 5,393 ha	Development envelope of up to 24,684 ha, with clearing up to 12,262 ha
<i>Operational elements</i>			
Groundwater abstraction - mine pit dewatering and water supply	Part IV assessed Total abstraction up to 45.5 GL/a: <i>Jimblebar MS 1126</i> • Not specified in MS 1126 • 26.5 GL/a assessed under Part IV <i>Orebody 31 MS 1021</i> • Not specified in MS 1021 • 16.2 GL/a assessed under Part IV	Additional groundwater abstraction for mine pit dewatering at the Jimblebar mine of up to 23.8 GL/a	Up to 69.2 GL/a

Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
	<i>Orebody 18 MS 439</i> - Not specified in MS 439 2.8 GL/a assessed under Part IV		
Surface water discharge to Ophthalmia Dam	Part IV approved <i>Jimblebar MS 1126</i> - Discharge of up to 16.425 GL/a Part IV assessed Part IV assessed <i>Orebody 31 MS 1021</i> - Not specified in MS 1021 16.2 GL/a assessed under Part IV	No change	Discharge of up to 32.625 GL/a surplus water to the Ophthalmia Dam system
Surface water discharge to watercourses	Part IV assessed and approved <i>Caramulla Creek</i> <i>Jimblebar MS1126</i> - Controlled discharge along Caramulla Creek to extend no further than 34 km from the northern boundary of the Development Envelope under natural, no-flow conditions (up to 75 ML/d (27.375 GL/a) assessed under Part IV) Surface water discharge - Jimblebar Creek <i>Jimblebar Creek</i> <i>Orebody 31 MS1021</i> - Dewater discharge to extend no further than 16 km from the discharge point and remain in the main drainage channel of Jimblebar Creek under natural no-flow conditions (up to 4 GL over 3 months maintenance and emergency discharge assessed under Part IV) J	No change	Caramulla Creek Controlled discharge of up to 27.375 GL/a surplus water must not extend further than 34 km along Caramulla Creek from the Caramulla discharge point, during natural, no-flow conditions Jimblebar Creek - Controlled discharge of up to 4 GL surplus water for a maximum three months per year for contingency purposes and must not extend further than 16 km along Jimblebar Creek from the Orebody 31 discharge point, during natural no-flow conditions - Controlled discharge of up to 2.19 GL/a surplus water must not extend further along Jimblebar Creek than 200 m from

Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
	<i>Jimblebar MS1126 Water Management Plan</i> The Jimblebar Creek wetting front must not reach 200 m from the upstream extent of Innawally Pool under natural no-flow conditions (up to 2.19 GL/a assessed under Part V)		the upstream extent of Innawally Pool, during natural no-flow conditions.
Aquifer reinjection (surface water management)	Part IV approved <i>Aquifer injection - Caramulla MAR</i> <i>Jimblebar MS1126</i> - Managed aquifer recharge in the Caramulla area to limit groundwater level rise to 25 m below ground level (up to 30 ML/d (10.95 GL/a) assessed under Part IV) Part V assessed <i>Aquifer injection - South Jimblebar MAR</i> <i>Jimblebar Hub Part V L5415/1988/9:</i> - Design capacity of 3.65 GL/a <i>Aquifer injection – Orebody 18 MAR</i> <i>Jimblebar Hub Part V L5415/1988/9:</i> - Design capacity of 13.14 GL/a		Up to 10.95 GL/a to the Caramulla MAR, ground water level to be no higher than 25 m below ground level. Up to 13.14 GL/a to the Orebody 18 (Ninga) MAR, ground water level to be no higher than 10 m below ground level.
Tailings storage – in-pit tailings storage facilities		Disposal of tailings in mine voids at Orebody 18 (including Orebody 17 deposit), Orebody 31 and Jimblebar (Wheelara)	Tailings to be disposed of in mine voids at Orebody 18 (including Orebody 17), Orebody 31, and Jimblebar (Wheelara)

Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
Mine pit voids and pit lakes	Not specified	Option for additional open voids at East Jimblebar and formation of pit lake/s	Option for open voids and formation of pit lake/s
Greenhouse Gas Emissions			
	Average Annual	Peak Annual	Total
Scope 1 <i>Diesel use, land clearing, electricity demand, rail transport.</i>	82,144 tonnes CO ₂ -e	277,075 tonnes CO ₂ -e	2,792,915 tonnes CO ₂ -e
Scope 2	None associated with this proposal – power generated by Yarnima Power Station (separate facility subject to the Safeguard Mechanism and <i>National Greenhouse and Energy Reporting Act 2007</i>).		
Scope 3 <i>Downstream emissions (including port, iron ore shipping and steel making).</i>	13,883,481 tonnes CO ₂ -e	63,600,877 tonnes CO ₂ -e	509,562,051 tonnes CO ₂ -e
Timing elements			
Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
Construction and operations	Part IV assessed and approved	Additional 5 years of operations	Up to 36 years, estimated to 2060

Proposal element	Existing proposals maximum extent, capacity or range	Proposed significant amendment extent, capacity or range	Combined Maximum extent or range
Decommissioning and closure	<i>Jimblebar MS 1126</i> • Not specified in MS 1126 • 50 years (to 2055) approved under Part IV <i>Orebody 31 MS 1021</i> • Not specified in MS 1021 • 30 years (to 2048) assessed under Part IV <i>Orebody 18 MS 439</i> • Not specified in MS 439 • 15 years (to 2011) assessed under Part IV		Up to 10 years

Units and abbreviations

ha – hectare

GL/a – gigalitres per annum

m – metres

MAR – managed aquifer recharge

Proposal alternatives

Several alternative options were considered by the proponent to continue iron ore mining operations instead of this proposal, which are outlined in section 2.4 of the proponent's ERD (BHP 2025a). The proponent considered mining adjacent deposits, such as Orebody 31 to the north, or Painkiller or Caramulla deposits in the east. However, given the current infrastructure that exists at the Jimblebar Hub these other options were not progressed.

The current placement of proposal elements considered a range of options, including avoiding significant ethnographic and archaeological sites, avoiding physical disturbances to conservation significant flora and fauna habitats and maximising use of brownfield areas. For example, the OSAs in the northeast of the development envelope were selected to avoid ghost bat roosts and to minimise haulage distances from pits to storage locations.

The proponent also considered a range of alternative methods for water and power provisions to support new infrastructure and operations. The current proposal water and power options have been selected to re-use surplus water for vehicle washdowns, standpipe infrastructure to reduce discharge to creek systems, and extensions to power lines to minimise dependency on diesel power generators.

Overall, two main ore haulage options were considered for the proposal to transport ore from pits to processing/crushing plants:

- short haul and conveying option (selected): ore from the East Jimblebar Pit is transported by truck to the primary crusher at East Jimblebar, and then transported to the handling plant at Jimblebar via a conveyor
- long haul option: ore from the East Jimblebar Pit is transported by truck to the existing primary crusher (PC3) at Jimblebar (approximately 6 km).

Proposal context

The proposal is located on the boundary between the Pilbara and Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) regions. Most of the development envelope is covered by the Fortescue and Hamersley subregion, with the southern portion of the development envelope occurring within the Augustus subregion.

Iron ore mining is the main land use in the region, in addition to pastoral leases. Existing iron ore mining operations occur within the development envelope as approved by the current Part IV approvals under the *Environment Protection Act 1986* (EP Act), discussed above. The proposal is approximately 50 km east of the existing Whaleback Mining Hub, with the Newman township occurring between the Whaleback and Jimblebar Hubs. The nearest neighbouring iron ore mining operations that are not run by the proponent, is Rio Tinto's Hope Downs 4 proposal, approximately 105 km northwest of the proposal.

The closest protected conservation areas are the Collier Range National Park (approximately 120 km southwest), Karijini National Park (approximately 150 km northwest) and Karlamilyi National Park (approximately 150 km northeast).

The proposal is located entirely within the Nyiyaparli Native Title Determination Area (WCD2018/008), represented by the Karla Nyiyaparli Aboriginal Corporation (KNAC).

The Ethel Gorge alluvial and calcrete aquifer is approximately 20 km to the west of the proposal, and this aquifer supports the *Ethel Gorge aquifer Stygobiont community Threatened Ecological Community* (Ethel Gorge TEC). However, the groundwater levels of the Ethel Gorge aquifer, which supports the TEC, are managed by Ophthalmia Dam through a managed aquifer recharge (MAR) scheme. Since 1981 Ophthalmia Dam has served as a discharge point for BHP's Jimblebar and Newman Hubs (Whaleback) and supports the Ophthalmia Borefield for the Newman town water supply.

Jimblebar Creek runs into the centre of the development envelope from the north and provides for Innawally Pool, a semi-permanent pool on the creekline. Caramulla Creek runs along the east of the development envelope. Jimblebar Creek and Caramulla Creek flow northwards, with the confluence of both creeks approximately 47 km downstream north of the development envelope, joining the Fortescue River approximately 18.5 km north of the creek confluence. The Fortescue River discharges into the Fortescue Marsh approximately 120 km north of the proposal.

Mining operations are conducted under the *Iron Ore (McCamey's Monster) Authorisation Agreement Act 1972* and *Iron Ore (Mount Newman) Agreement Act 1964*. Under this legislation the proposal is comprised of various tenure, including Mineral Leases, Miscellaneous Licences, a Pastoral Lease, an Exploration Licence, Crown Lease and Ethel Creek tenure (see section 3.2 in the proponent's ERD for further information, (BHP 2025a)).

The following terminology is used throughout this report:

- **significant amendment:** construction, operation (above and below water table) and closure of the East Jimblebar deposit, new OSAs, new beneficiation plant and associated in-pit tailings storage facilities at OB17/18, OB31, Jimblebar South and Jimblebar (Wheelara).
- **proposal:** the combination of the significant amendment with the approved proposal.
- **approved proposal;** Orebody 31 (MS 1021), Orebody 18 (MS 1012 and MS 439), and Jimblebar Optimisation Project (MS 1126).
- **development envelope:** refers to the combined development envelope of the approved proposal and the significant amendment.
- **conceptual footprint:** refers to the new areas to be directly disturbed for the significant amendment.

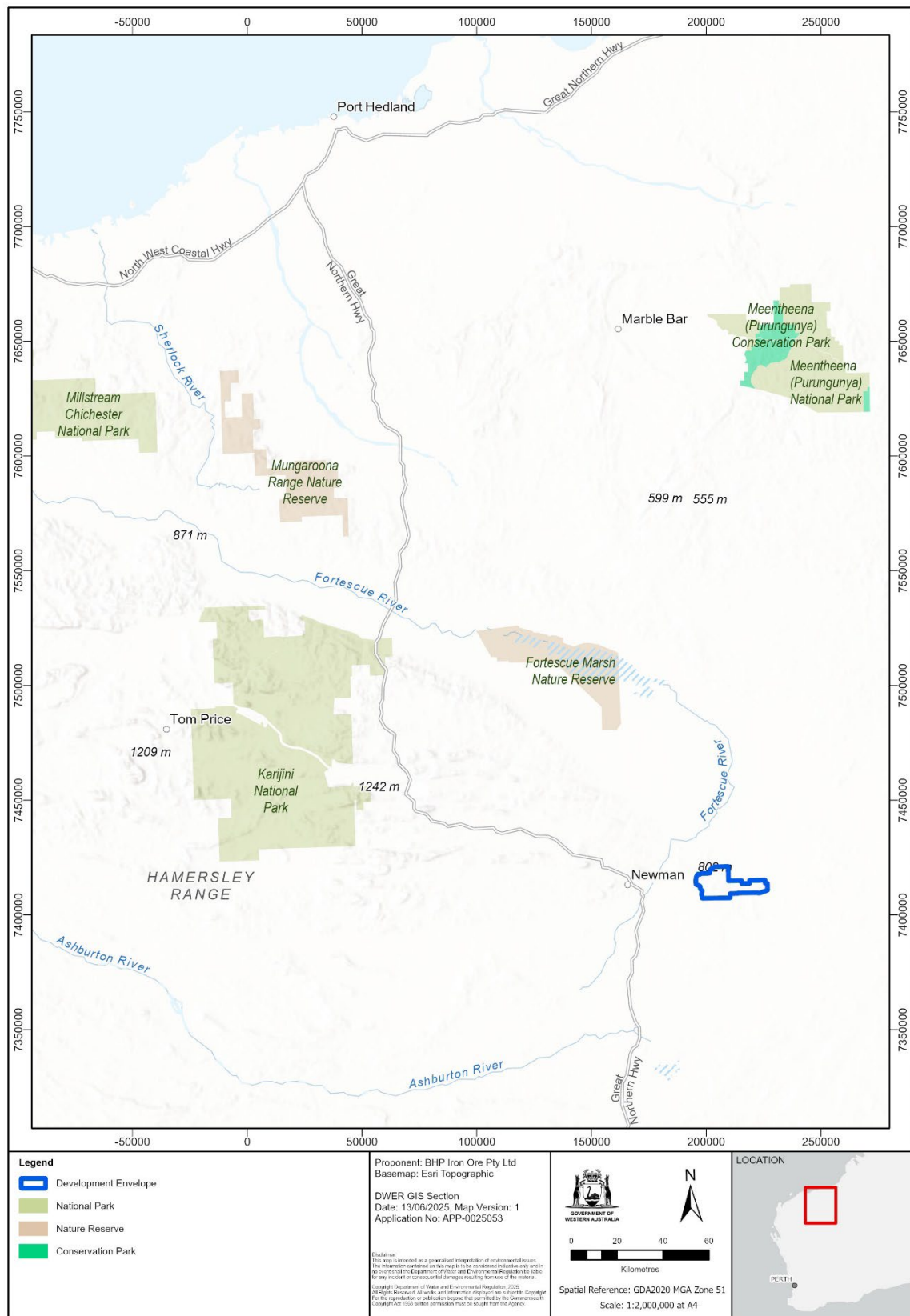


Figure 1: Jimblebar Hub project location

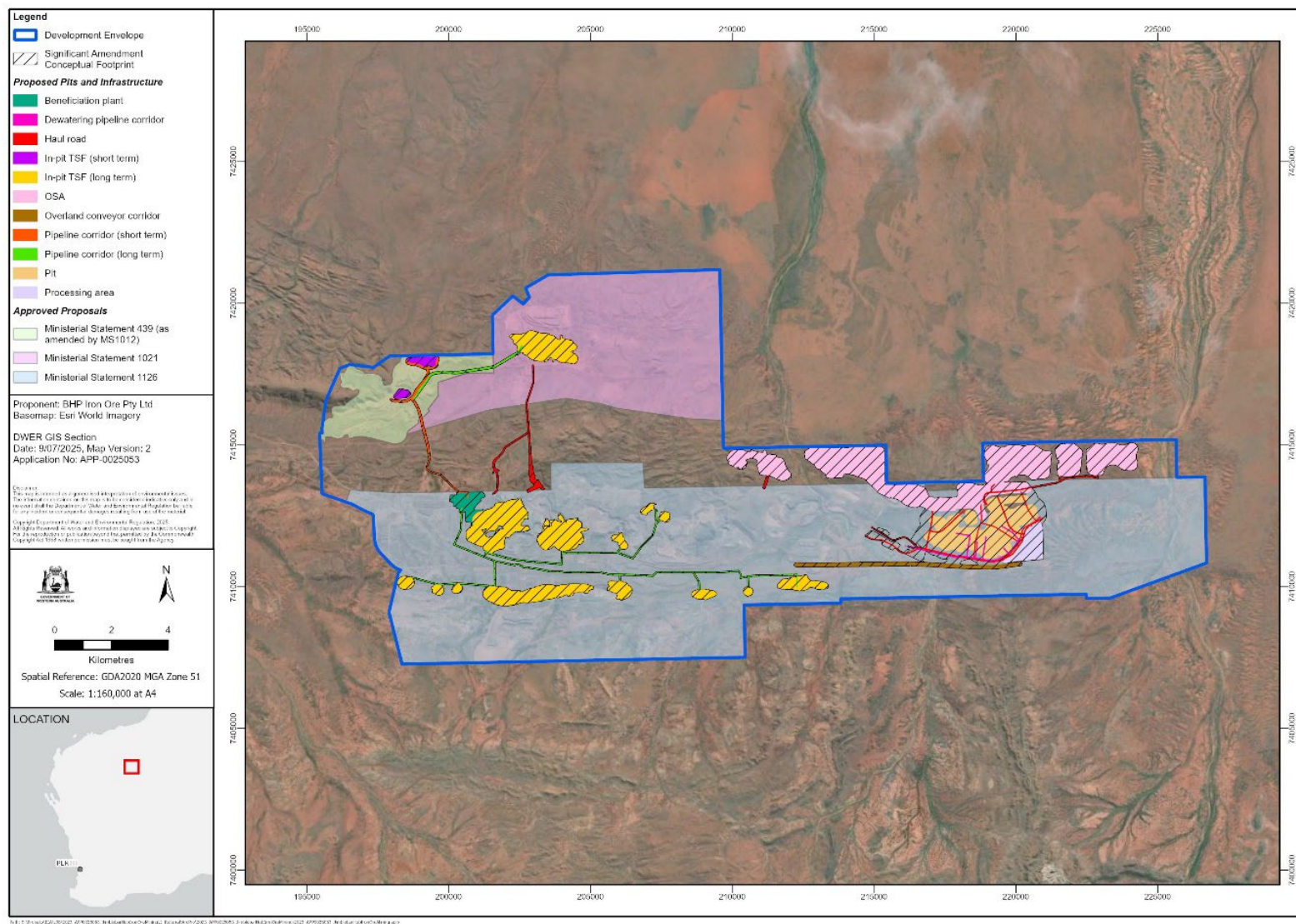
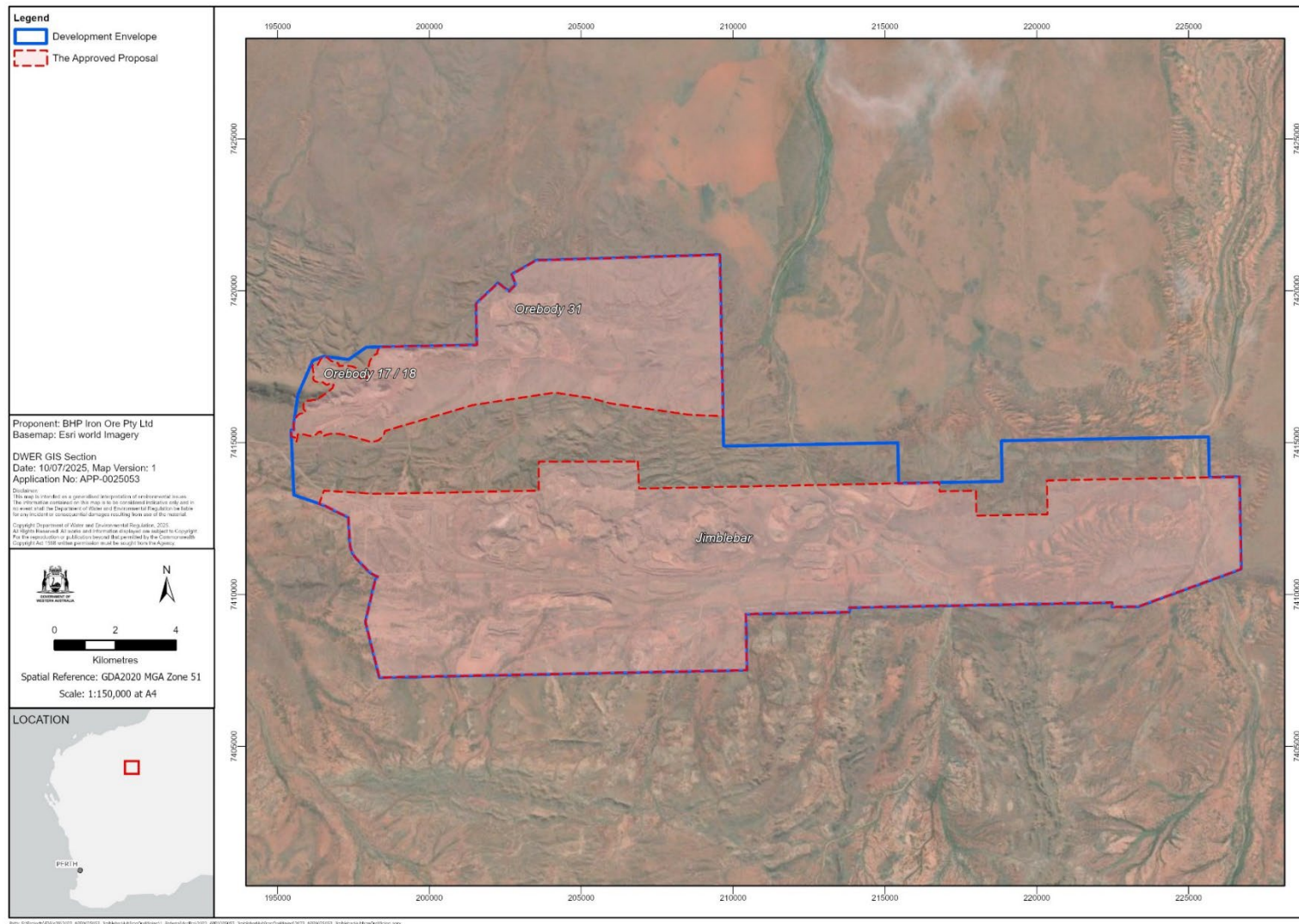


Figure 2: Jimblebar Hub development envelope and disturbance footprint



2 Assessment of key environmental factors

This section includes the EPA's assessment of the key environmental factors. The EPA also evaluated the impacts of the proposal on other environmental factors and concluded these were not key factors for the assessment. This evaluation is included in Appendix D.

The EPA has assessed the proposal in the context of the approved proposals while having regard to the combined and cumulative effect that the implementation of the proposal may have on the following environmental factors.

2.1 Flora and Vegetation

2.1.1 Environmental objective

The EPA environmental objective for flora and vegetation is *to protect flora and vegetation so that biological diversity and ecological integrity are maintained* (EPA 2016c).

2.1.2 Investigations and surveys

The investigations and surveys used to inform the assessment of the potential impacts to flora and vegetation are provided in Appendix E.

The surveys were mostly consistent with the *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016e). The proponent has provided a summary of all flora and vegetation surveys that are relevant to the significant amendment, which is included as Appendix 8 of the Environmental Review Document (BHP 2025a).

The EPA notes that a small portion of the development envelope remains unmapped (408 ha, 1.7%) due to gaps in survey coverage, with 39.74 ha being within the conceptual footprint. These areas are visible in Figure 8-6 of the proponent's ERD (BHP 2025a). The unsurveyed areas correspond to gaps in vegetation mapping coverage in areas of the proposal's development envelope between or adjacent to the approved proposal areas. BHP considered that unsurveyed areas within the development envelope would contain the same vegetation associations as neighbouring areas (BHP 2025a).

The EPA determined it could proceed with its assessment when considering the information provided in Response to Submissions (RTS) (BHP 2025b) and relevant appendices, combined with the addition of strong recommended conditions requiring pre-clearance targeted surveys, clearing limits on priority flora, and establishing mining exclusion zones.

2.1.3 Assessment context – existing environment

A total of 10,195 ha of native vegetation has been approved to be cleared under the approved proposal. The significant amendment would increase the cumulative clearing limits with an additional clearing of 2,067 ha and increase the development

envelope area by an additional 5,393 ha. The impacts to flora and vegetation for the proposal are described below.

Flora and vegetation was considered a key environmental factor in all of the previous assessments. Known impacts of the approved proposals that are relevant to the significant amendment are considered under section 2.1.9. The flora and vegetation aspects of this significant amendment are assessed below.

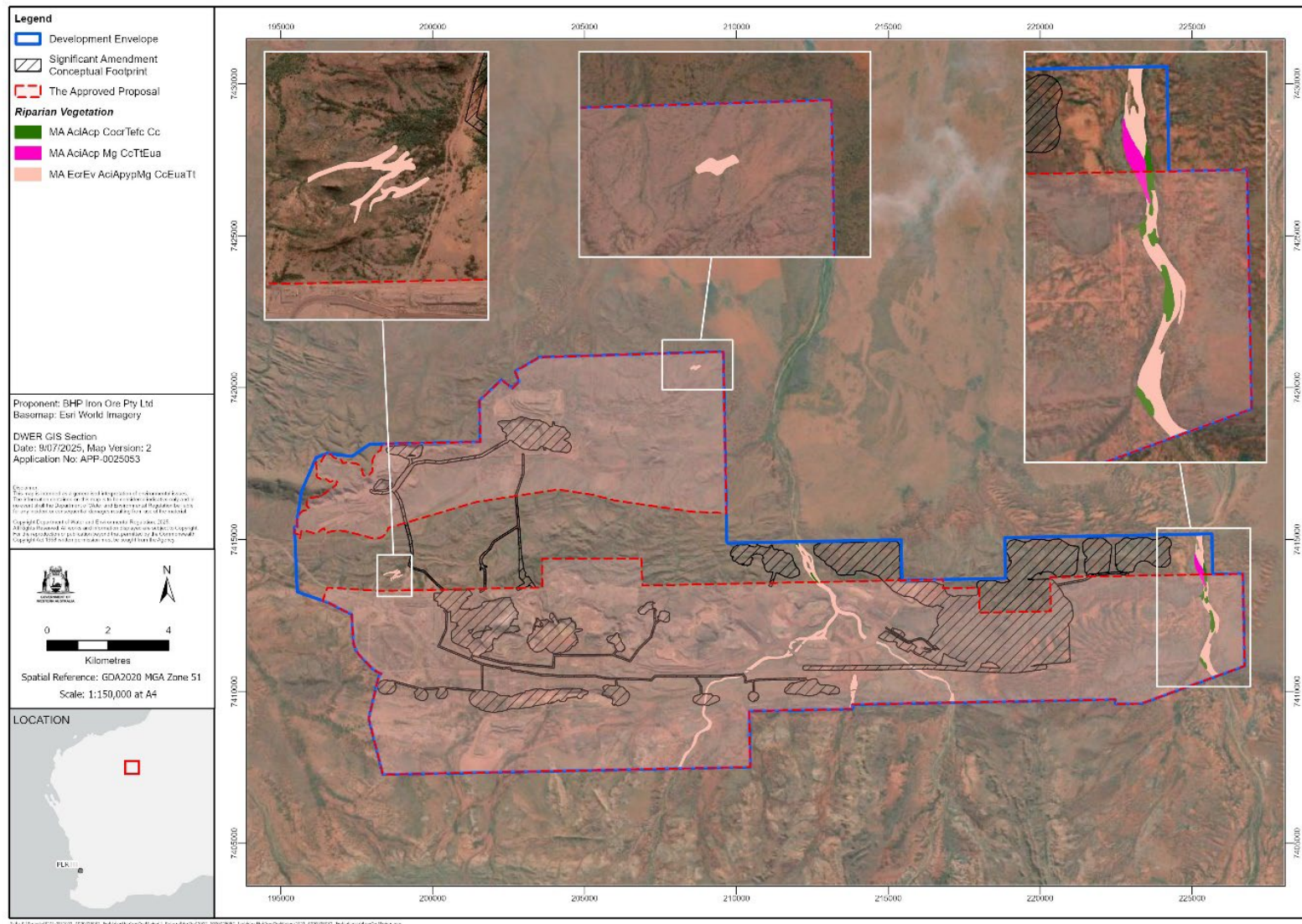
Vegetation

The proposal occurs within the Fortescue, Hamersley and Augustus subregions within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (BHP 2025a). Almost half (46.3%, 11,426.6 ha) of the vegetation within the development envelope was considered to be in 'Good' to 'Excellent' condition. The remaining (4.9%, 1229.4 ha) is in 'Poor' to 'Completely Degraded' condition. The native vegetation condition of the significant amendment was reported to be predominantly in 'Very Good' or 'Excellent' condition (78.1 %) (BHP 2025a).

No TECs or Priority Ecological Communities (PECs) listed under the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were recorded within the development envelope.

120 vegetation associations were mapped within the development envelope, of which 73 vegetation associations occur in the significant amendment (Onshore Environmental Consultants 2014; 2019). They comprised predominantly of *Acacia* scrublands on plains and *Triodia* hummock grassland communities occurring on hill slopes.

Three vegetation associations represent riparian vegetation: MA AciAcp CocrTefc Cc, MA AciAcp Mg CcTtEua and MA EcrEv AciApyPMg CcEuaTt. The mapped extents of riparian vegetation within the development envelope are shown in Figure 4. No groundwater dependent vegetation (GDV) were recorded within the development envelope and immediate surrounds. However facultative phreatophyte tree species (*Eucalyptus victrix* and *Eucalyptus camaldulensis*) were the dominant overstorey species within the riparian vegetation occurring within Jimblebar Creek and Caramulla Creek (BHP 2025a).



Flora

No threatened flora listed under the BC Act or EPBC Act were recorded within the development envelope. Seven priority flora species (comprising two priority 1, one priority 2 and four priority 3), as listed by the Department of Biodiversity, Conservation and Attractions (DBCA) have been recorded within the development envelope. These include:

- *Acacia corusca* (P1)
- *Aristida jerichoensis* var. *subspinulifera* (P3)
- *Eremophila capricornica* (P1)
- *Euphorbia inappendiculata* var. *inappendiculata* (P3)
- *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3)
- *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3)
- *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684) (P3).

2.1.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the proponent's RTS (BHP 2025b). Public consultation on the proposal raised concerns about cumulative impacts on species.

The key issues raised during the public consultation on the proposal and how they have been considered in the assessment are described in sections 2.1.5 to 2.1.9.

2.1.5 Potential impacts from the proposal

Direct impacts

Potential impacts to flora and vegetation from:

- clearing of up to the following within the development envelope:
 - 2,067 ha of native vegetation, of which 1,864 ha is in 'Good' to 'Excellent' condition
 - 0.8 ha of riparian vegetation associated with a major water course (MA EcrEv AciAypMg CcEuaTt)
 - 4,468 individuals of *Eremophila capricornica* (P1)
 - 55 individuals of *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3)
 - 9,000 individuals of *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3)
 - 245 individuals of *Hibiscus* aff *campanulatus* (undetermined, but likely a P1).

Indirect impacts

Potential indirect impacts to flora and vegetation from:

- alteration to groundwater and surface water, dust deposition, introduction/spread of weeds and increased risks of bushfire (addressed in section 2.1.9).

2.1.6 Avoidance measures

The proponent has designed the significant amendment to avoid all locations of *Acacia corusca* records (BHP 2025b).

2.1.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to flora and vegetation:

- utilisation of existing infrastructure to minimise the need for vegetation clearing, for example utilising mine pits for tailings storage instead of clearing land for additional tailings storage facilities
- implementation of the Jimblebar Hub Flora and Vegetation Management Plan (Version 1, December 2023) (BHP 2023e).

2.1.8 Rehabilitation measures

The proponent has proposed the following progressive rehabilitation measures:

- undertaking site specific progressive rehabilitation of disturbed areas in accordance with the Jimblebar Mine Closure Plan (MCP)
- preparation of a revegetation program to establish native vegetation that blend in with neighbouring landscapes
- local province seed used within a specified seed mix for rehabilitation.

2.1.9 Assessment of impacts to environmental values

The EPA considered that the key environmental values for flora and vegetation likely to be impacted by the proposal are native vegetation in 'Good' to 'Excellent' condition, locally significant vegetation associations and priority flora species.

The EPA has assessed the significant amendment in the context of the approved proposals while having regard to the combined and cumulative effect that the implementation of the proposal may have on the flora and vegetation factor.

Vegetation

The proponent is currently authorised to disturb up to 10,195 ha of native vegetation within the development envelope as part of the previously approved proposals. The proponent is proposing to remove an additional 2,067 ha of which approximately 90% (1,864 ha) is in 'Good' to 'Excellent' condition (BHP 2025a). The proponent has proposed to offset the residual impacts to native vegetation through financial contributions to the Pilbara Environmental Offsets Fund (PEOF), which is reflected in recommended condition B8.

The combined (approved proposal and significant amendment) clearing equates to the removal of 12,262 ha of native vegetation within the development envelope, of which approximately 53.1% (6,521 ha) is in 'Good' to 'Excellent' condition.

One riparian vegetation (MA EcrEv AciApypMg CcEuaTt) is proposed to be directly impacted by the significant amendment. Up to 0.8 ha of this vegetation type is proposed to be cleared, representing 0.4% of the mapped extent of this vegetation type in the development envelope. The combined effect of riparian vegetation clearing for the significant amendment and approved proposal is approximately 52.6 ha, increasing the impact from 25.3% to 25.7% for the proposal. The EPA is of the view that the clearing of riparian vegetation for the significant amendment represents a significant residual impact as the vegetation is considered significant in the context of biological diversity and ecological integrity, providing habitat for conservation significant flora and fauna species.

Subject to the proposed limits and extents in recommended condition A1, and the environment outcomes in recommended condition B1 (limits on impacts to riparian vegetation and vegetation in 'Good' to 'Excellent' condition and minimising disturbances to flora and vegetation), B6 (progressive rehabilitation) and B8 (contributions to PEOF), the residual impacts to vegetation are likely to be consistent with the EPA's objective for flora and vegetation.

Flora

Seven priority flora species were recorded within the development envelope (Figure 5), with all seven species previously assessed as part of the approved proposals. Of these seven species, three have been recorded within the conceptual footprint, including:

- *Eremophila capricornica* (P1)
- *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3)
- *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3).

The combined impact, provided by the proponent, is considered in the context of the approved proposals and significant amendment. Estimations of percentage impact in the vicinity of the proposal and at the state level were based on the number of individuals in the development envelope and known records within the state (Table 2).

As previously mentioned in section 2.1.2, there were limitations associated with the survey coverage and this is likely to have resulted in an underrepresentation of conservation significant flora in the development envelope. Given this, the EPA has assessed and, where appropriate, recommended restricting impacts to certain priority flora species along with targeted pre-clearance surveys (conditions B1-1(3) and B1-3) for those priority species to ensure impacts are not greater than expected and do not result in changes to the conservation status of the species.

Table 2: Potential direct impacts to priority flora from the significant amendment based on proponent information.

Priority species	State records ¹ (individuals)	No of individuals in development envelope ²	No of individuals to be impacted	Combined impact of individuals ³	Species Range	Impact in development envelope ² (%)	Impact at state level (%)	Combined impact in the development envelope ² (%)
<i>Eremophila capricornica</i> (P1)	34,019	6,646	4,468	5,360	Approx. within 40 km in the Pilbara	67	13	81
<i>Acacia corusca</i> (P1)	389	159	0	0	Approx. 4 km in Pilbara	0	0	0
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3)	100,001	272	55	244	Approx. 300 km in Pilbara and three records in Gascoyne	20	0.05	90
<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3)	296,076	50,466	9,000	1	Approx. 180 km in Pilbara and two records in Gascoyne and Little Sandy Desert	18	3	18
<i>Hibiscus</i> aff <i>campanulatus</i> (undetermined, but likely a P1)	55,674	417	245	245	Approx. 50 km in the Pilbara	58	0.44	58

1. Based on BHP database, comprising of BHP survey data, publicly available data and data sourced from DBCA (BHP 2025a; 2025b)

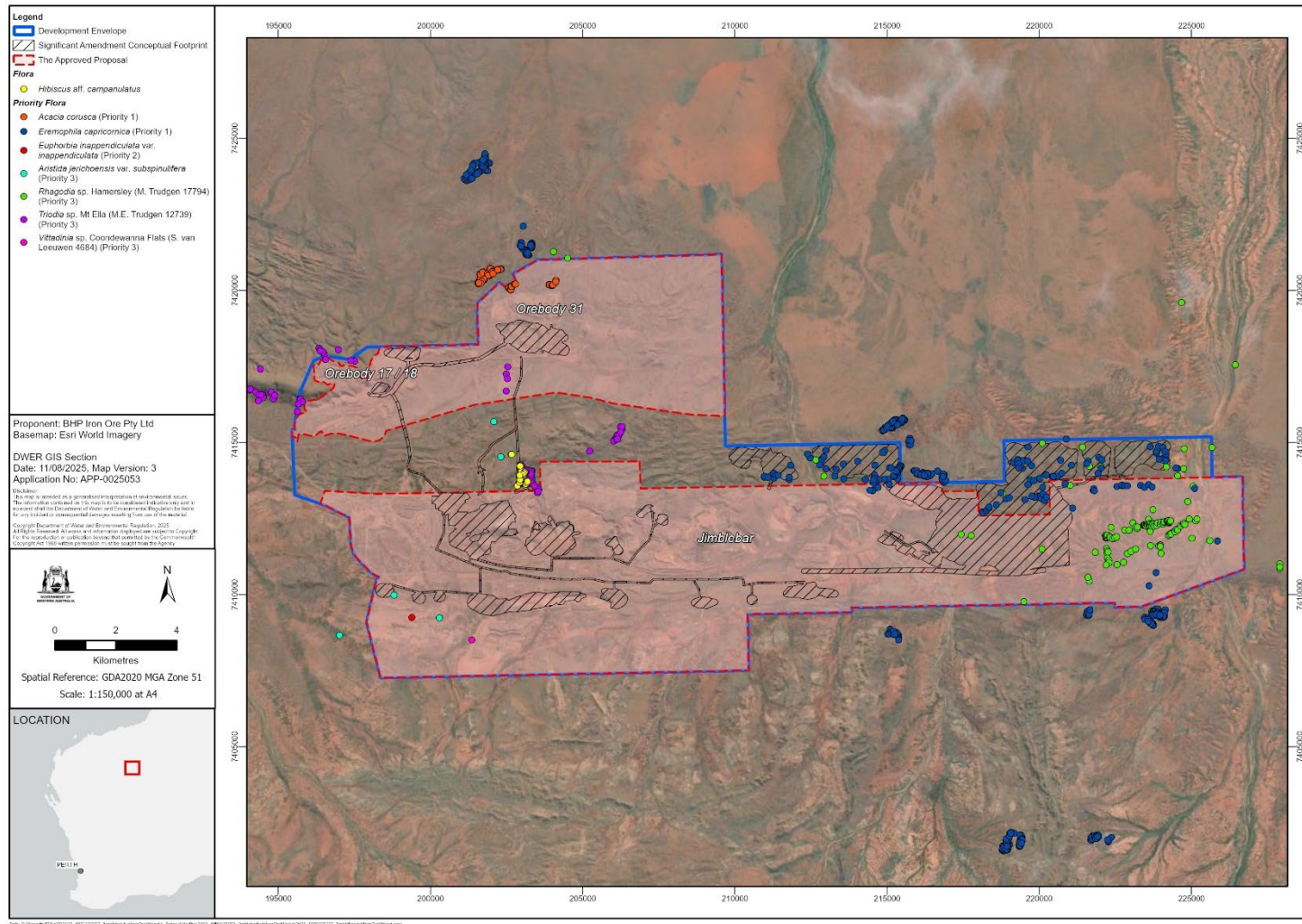
2. Excluding unsurveyed areas.

3. Potential impact from the Proposal (based on the Conceptual footprint) and from the Approved Proposals (i.e. potential impacts from the Combined Proposal)

Based on the conceptual footprint, the significant amendment will result in the clearing of 4,468 individuals of *Eremophila capricornica* (P1). This would result in a combined impact of the significant amendment and the approved proposals of 5,360 individuals, resulting in a 16% impact to the species. The EPA notes that *Eremophila capricornica* was predominantly recorded in the eastern half of the proposal and the species was found outside the development envelope and notes that locations of *Eremophila capricornica* have been recorded extending up to 25 km east of the proposal (Biologic 2021; Stantec 2024). The EPA considers that a precautionary approach should be applied, and the loss of these individuals should be mitigated due to the restricted nature of the species in the vicinity of the proposal. Conditions B1-1(3) and B1-2 have been recommended to restrict the impacts to 4,468 individuals for the significant amendment. DBCA advised that retained individuals within the development envelope would be in close proximity to the conceptual footprint and have the potential to be indirectly impacted by the proposal. The EPA therefore recommends an update of the proponents Flora and Vegetation Management Plan (BHP 2023e) to include suitable trigger and threshold levels to detect any indirect impacts, ensuring no adverse impacts from the proposal to the species (recommended conditions B1-1(4) and B1-6).

One population of *Acacia corusca* (P1) occurs within the development envelope. The proponent has avoided impacts to this species and proposes to continue to manage this species under existing mitigation for the approved proposal with a 50 m buffer applied to known locations within the development envelope and implementation of the Flora and Vegetation Management Plan (BHP 2023e) (BHP 2025a; b). Taking a precautionary approach, noting that there are only 389 known individuals of *Acacia corusca*, and that known populations occur adjacent to, or within, the development envelope, the EPA recommends a 300 m buffer be applied around occurrences of this species (condition B1-1(5) and B1-2) for the significant amendment, in addition to the 50 m exclusion zone already implemented for *Acacia corusca* for the approved proposal (B1-1(5)). The EPA notes a regional survey of the species did not identify additional individuals of this species and considers the species likely to be highly restricted to within the vicinity of the proposal (Spectrum Ecology 2023). The EPA recommends the proponent prepare and submit a Conservation and Research Plan (condition B1-7) to ensure that the EPA's objective for this factor will be met.

The EPA notes that due to gaps in survey coverage, not all of the development envelope was surveyed. The EPA considers that impacts to *Acacia corusca* and *Eremophila capricornica* should be regulated through conditions B1-1 and B1-2 to avoid disturbance and condition B1-3 to undertake pre-clearance surveys in unsurveyed areas to further avoid and minimise direct impacts to these species.



Cumulative Impact Assessment

The proponent has assessed the cumulative effects of the proposal by considering this proposal in addition to BHP projects in the Eastern Pilbara and information sourced from DBCA.

The EPA has determined that the cumulative impacts to vegetation in 'Good' to 'Excellent' condition and priority flora are not at a level that would warrant a decision to allow no further clearing of these values for this proposal. However, due to the mining and infrastructure development impact pressures in the region and local area, the EPA must consider and appropriately manage the incremental loss of these values.

There are five vegetation associations (18, 28, 29, 82, and 216) that intersect the proposal. All vegetation associations will have more than 99% of their pre-European extent remaining following the implementation of the proposal. The EPA considers that the vegetation proposed to be impacted represents a relatively small area of the vegetation associations remaining and is therefore not likely to be at a significant threshold for the vegetation associations or result in large-scale irreversible impacts.

Cumulatively, the native vegetation associations being impacted are likely to be limited to a relatively small extent. However, in EPA's advice on the cumulative impacts in the Pilbara (EPA 2014), the EPA considered that, without intervention, the increasing cumulative impacts of development and land use in the Pilbara region would significantly impact biodiversity and environmental values.

The EPA considers that the environmental outcomes are likely to be consistent with the EPA objective for flora and vegetation, subject to the EPA's recommended conditions B1-1, B1-2, B1-3 and B8 (offsets).

Rehabilitation and Closure

The EPA considers that during operation and closure of the significant amendment and the approved proposal, measures to improve environmental outcomes for rehabilitation and mine closure are required. The proponent has committed through the implementation of the Jimblebar Hub MCP (BHP 2023h), to undertake progressive rehabilitation during the life of the proposal. The EPA notes the MCP includes strategies to be implemented for closure for the existing and proposed operations at Jimblebar. Further, the completion criteria for vegetation on rehabilitated land is to be self-sustaining and compatible with the post mining land use.

The proponent's most recent Annual Environmental Report, for the period June 2023 – June 2024 (BHP), reports rehabilitation undertaken to date for all its Pilbara operations. This report shows a varying degree of progress across different types of landscape.

The proponent has reported 538.2 ha of land has been rehabilitated at Jimblebar for the various Ministerial Statements (439, 1012, 1021 and 1126). Whilst the EPA recognises that progressive rehabilitation is difficult for mines with a long operational project life, the EPA is of the view that the cumulative impacts are increasing in this bioregion. These impacts should be mitigated through progressive rehabilitation.

Over the life of the proposal, the proponent's rehabilitation techniques, practices and outcomes can be improved through research, trials and monitoring programs, to ensure that they are effective, achievable and deliver the expected rehabilitation outcomes. The EPA also considers that the rate and timing of rehabilitation during operations and post mining can be improved.

The EPA's Section 16(e) advice, *Cumulative environmental impacts of development in the Pilbara region (August 2014)* states that the environmental impact from clearing of vegetation is exacerbated by the lack of successful rehabilitation of mines in the Pilbara. Although there has been mining in the Pilbara for over 60 years, there is limited evidence that all proponents of mines in the area have successfully rehabilitated any areas that have been subject to large-scale mining. Further work needs to be undertaken to improve broad scale rehabilitation techniques, including establishing the standard of rehabilitation that can reasonably be expected to be achieved.

The EPA recommends condition B6 which is required to achieve improved rehabilitation outcomes and ensure the proposal is undertaken in a manner that increases rates of progressive rehabilitation and delivers improved outcomes. The implementation of condition B6, requires submission of an overarching rehabilitation strategy for the life of the proposal which outlines expected timing and areas (ha) to be rehabilitated, and the submission of a Rehabilitation Performance Report every five (5) years, to demonstrate that increased rates of progressive rehabilitation and improved outcomes have been achieved.

2.1.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts in the context of the approved proposals on flora and vegetation environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can mitigate potential inconsistency with the EPA factor objective. The EPA assessment findings are presented in Table 3.

The EPA has also considered the principles of the *Environmental Protection Act 1986* (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 3: Summary of assessment for flora and vegetation

Residual impact or risk to environmental value	Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1. Clearing of up to 2,067 ha of native vegetation of which 1,864 ha is in 'Good' to 'Excellent' condition within the conceptual footprint. The combined effect of the approved proposals and significant amendment is the loss of 12,262 ha of native vegetation of which 6,521 ha is in 'Good' to 'Excellent' condition.	The clearing of 'Good' to 'Excellent' condition vegetation within and immediately adjacent to the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species. The EPA advises that subject to limitations on clearing (condition A1-1 and B1-1), and recommended conditions requiring progressive rehabilitation (B6) and offsets (B8), the significant residual impact can be counterbalanced, so that the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.	Condition B1-1 (Limitations and extent) Disturbance limits to clearing of vegetation in 'Good' to 'Excellent' condition. Condition B1 (Flora and vegetation) Disturbance limits to environmental values. Condition 6 (Rehabilitation) Requirement to undertake progressive rehabilitation using seeds of local provenance. Condition B8 (Offsets) Contribution to PEOF for the clearing of 'Good' to 'Excellent' condition vegetation within the Pilbara bioregion.

Residual impact or risk to environmental value	Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
2. The significant amendment will result in the loss of priority flora: • up to 13% of known individuals of <i>Eremophila capricornica</i> (P1) • up to 0.05% of known individuals of <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3) • up to 3% of known individuals of <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3) • up to 0.44% of known individuals of <i>Hibiscus</i> aff <i>campanulatus</i> (undetermined, but likely a P1).	The significant amendment will have residual impacts on <i>Eremophila capricornica</i> (P1), <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) (P3), <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) (P3) and <i>Hibiscus</i> aff <i>campanulatus</i> (undetermined). The EPA advises that the proposal should be subject to conditions (B1-1, B1-2, B1-3 and B1-4) to protect any remaining individuals of priority flora within and immediately outside of the development envelope. The EPA considers that implementation of the recommended conditions will ensure that the environmental outcome is likely to be consistent with the EPA's objective for this factor.	Condition B1-1 (Flora and vegetation) Disturbance limits to selected priority flora species. Pre-clearance surveys of unsurveyed areas prior to disturbance.
3. Clearing of 0.8 ha of riparian vegetation.	The clearing of riparian vegetation within the Pilbara bioregion is significant in the context of biological diversity and ecological integrity, as it provides habitat for conservation significant flora and fauna species. The EPA advises that subject to recommended conditions (A1- 1, B1-1, B8) requiring limitations on clearing and offsets, the significant residual impact can be counterbalanced, so that the environmental outcome is likely to be consistent with the EPA objective for flora and vegetation.	Condition A1 (Limitations and extent) Disturbance limits to riparian vegetation. Condition B1 (Flora and vegetation) Disturbance limits to riparian vegetation. Condition B8 (Offsets) Contribution to PEOF for impacts to riparian vegetation.

Residual impact or risk to environmental value	Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
4. Indirect impacts to <i>Acacia corusca</i> .	The EPA advises that no residual direct impact to <i>Acacia corusca</i> is anticipated and the environmental outcome is likely to be consistent with the EPA's objective for flora and vegetation.	Condition B1 (Flora and vegetation) Establishment of a 300 m MEZ around individuals of <i>Acacia corusca</i> . Requirement for no adverse impacts to <i>Acacia corusca</i> .
5. Indirect impacts associated with the introduction/spread of weeds and altered hydrological regimes.	The EPA advises that the potential indirect impacts to flora and vegetation represents a residual impact. The EPA considers that the residual impact can be minimised appropriately through the implementation of conditions (B1-4 and B1-6), and this will ensure the outcome is likely to be consistent with the EPA's objective for flora and vegetation.	Condition B1 (Flora and Vegetation) Avoid and minimise indirect impacts from the introduction or spread of weeds, dust deposition, and altered bushfire and hydrological regimes. Implement the Flora and Vegetation Management Plan.

2.2 Terrestrial Fauna

2.2.1 Environmental objective

The EPA environmental objective for terrestrial fauna is *to protect terrestrial fauna so that biological diversity and ecological integrity are maintained* (EPA 2016b).

2.2.2 Investigations and surveys

The investigations and surveys used to inform the assessment of the potential impacts to terrestrial fauna are provided in Appendix E.

The terrestrial fauna surveys were mostly consistent with *EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020) and *EPA Technical Guidance – Sampling of short range endemic invertebrate fauna* (EPA 2016a). The surveys for vertebrate fauna presented limitations, (conducted during a single season and under suboptimal conditions) which may have contributed to an underrepresentation of fauna diversity within the development envelope.

The EPA notes that a small portion of the development envelope remains unmapped (346 ha) due to gaps in survey coverage. These unsurveyed areas occur mostly in the approved proposal area and outside of the conceptual footprint for the proposal (BHP 2025a; BHP 2024b). The unsurveyed areas are not proposed to be cleared, with the exception of a linear corridor between Jimblebar and OB18.

The EPA determined it could proceed with its assessment when considering the additional information provided in the RTS (BHP 2025b) combined with strong recommended conditions requiring implementation of mining exclusion zones around threatened fauna habitat, limiting disturbance of important fauna habitat, avoidance and/or mitigation of impacts to conservation significant species, and pre-clearance surveys.

2.2.3 Assessment context: existing environment

Approximately 10,195 ha of native vegetation was approved to be cleared under previously approved proposals. Terrestrial fauna was considered a relevant environmental factor for the approved proposals. Known cumulative impacts of the approved proposals that are relevant to the significant amendment are considered under section 2.2.9.

The significant amendment is expected to clear an additional clearing of 2,067 ha (total clearing up to 12,262 ha) and increase the development envelope area by an additional 5,438 ha (development envelope of 24,684 ha). The impacts to terrestrial fauna for the proposal are described below.

Fauna Habitat

Eleven broad fauna habitat types were mapped within the development envelope (Figure 6), namely hillcrest/hillslope (6,760.1 ha), mulga woodland (3,322.1 ha), drainage area/floodplain (3,014 ha), sand plain (1,402.9 ha), stony plain (1,201.2 ha), major drainage line (486.5ha), hardpan plain (406.6 ha), minor drainage line

(328.1ha), gorge/gully (185.3 ha), breakaway/cliff (114.7 ha), and claypan (90.5 ha) (BHP 2025a).

Significant habitat features such as caves and semi-permanent water sources were identified throughout the development envelope, providing supporting habitat for significant fauna species such as the northern quoll and ghost bat. Major drainage line habitat was also considered of high importance for vertebrate fauna as it is limited in extent in the surrounding region and provides supporting habitat for species of conservation significance.

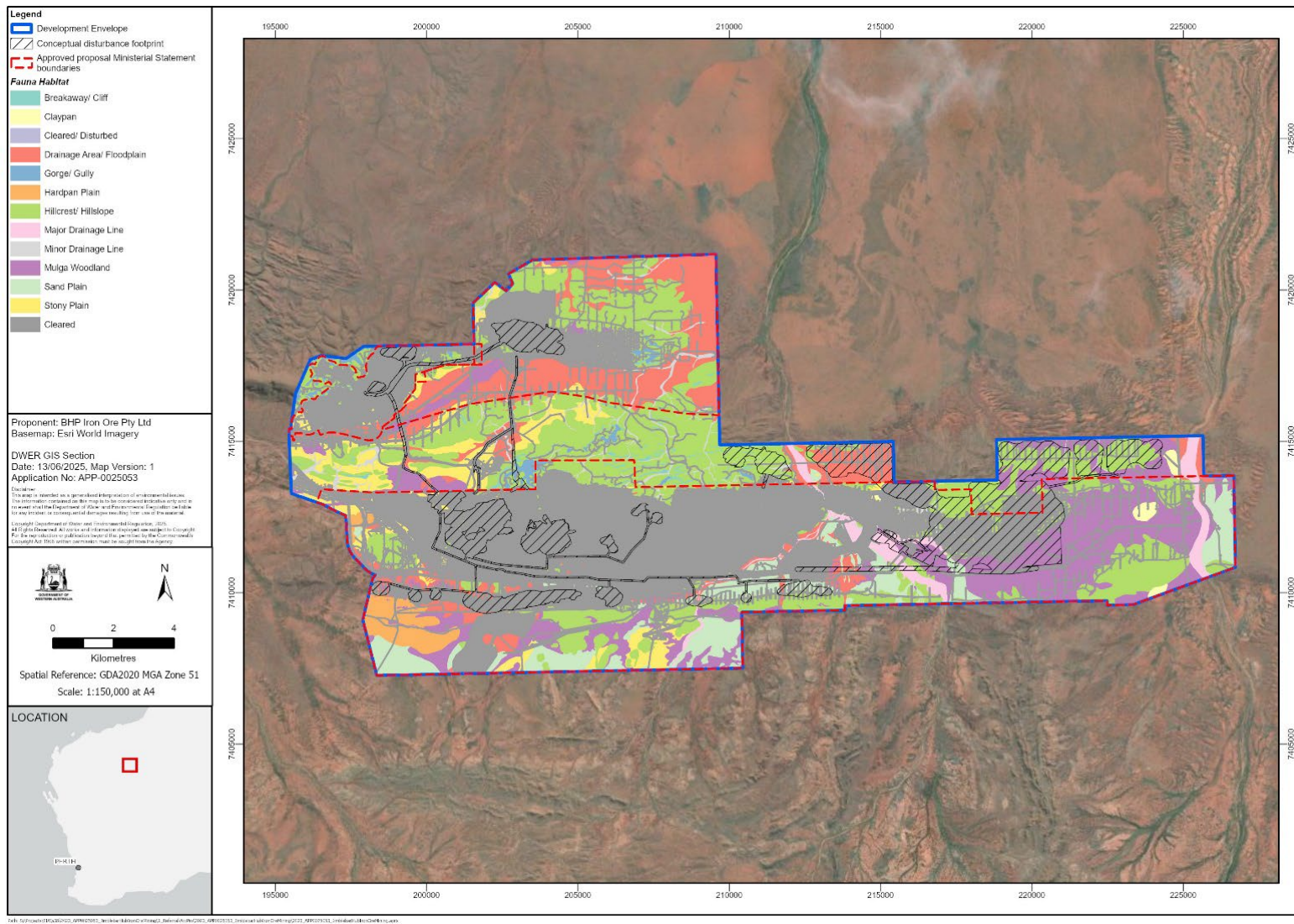


Figure 6: Fauna habitat within the development envelope

Significant Fauna

Vertebrate Fauna

Species of conservation significance that were recorded in the development envelope include:

- northern quoll (*Dasyurus hallucatus*) (EN)
- ghost bat (*Macroderma gigas*) (VU)
- spotted ctenotus (*Ctenotus uber johnstonei*) (P2)
- western pebble-mound mouse (*Pseudomys chapmani*) (P4)
- brush-tailed mulgara (*Dasymercus blythi*) (P4)
- garganey (*Anas querquedula*) listed (Migratory).

The threatened and priority fauna species with a possible or likely occurrence include:

- peregrine falcon (*Falco peregrinus*) (OS)
- bilby (*Macrotis lagotis*) (VU)
- Pilbara leaf-nosed bat (*Rhinonicteris aurantia*) (VU)
- Pilbara olive python (*Liasis olivaceus barroni*) (VU)
- grey falcon (*Falco hypoleucos*) (VU)
- Pilbara flat-headed blind-snake (*Anilius ganeī*) (P1).

The Pilbara flat-headed blind-snake and peregrine falcon will not be further considered by the EPA as they were not recorded during the past several surveys conducted in the development envelope and they are not expected to be significantly impacted by the significant amendment.

Invertebrate Fauna

Two invertebrate species have been confirmed to represent SREs including a single record of *Anidiops* sp. MYG286-DNA and *Conothele* sp. MYG279 recorded in drainage line and drainage foci habitats within the development envelope.

Nineteen potential SRE invertebrate fauna species have also been recorded from the development envelope of the proposal, comprising isopods from the genus *Buddelundia* sp., pseudoscorpions from the genus *Austrohorus* sp., *Beierolpium* sp., *Indolpium* sp., and *Synsphyronus* sp., one scorpion species (*Lychas* sp. 'bituberculatus group') and spiders from the genus *Idiosoma* sp., and *Karaops* sp. None of these species are listed under the BC Act, EPBC Act or as priority species by the DBCA (BHP 2025a).

2.2.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the response to submissions documents (BHP 2025b).

During the public review of the updated referral information, concerns were raised regarding unsurveyed areas within the development envelope, along with direct and indirect impacts to conservation significant fauna.

The key issues raised during the public consultation on the proposal and how they have been considered in the assessment are described in sections 2.2.5 to 2.2.9.

2.2.5 Potential impacts from the proposal

Potential impacts to terrestrial fauna from:

- clearing of up to 2,067 ha of native vegetation comprising terrestrial fauna habitats
- direct impacts to locations where five potential SRE invertebrate taxa were recorded
- fauna injury or mortality during construction or operational activities
- habitat fragmentation and barriers to fauna movement
- habitat degradation associated with construction, operational and closure activities, including altered fire regimes and hydrological regimes
- disturbance from dust, light, noise and/or vibration (blasting), resulting in the displacement of fauna
- disturbance resulting from an increase in feral fauna species.

The EPA considers that changes in groundwater and hydrological regimes may impact foraging and dispersal opportunities of terrestrial fauna habitat. Impacts to inland waters are considered in section 2.3.

2.2.6 Avoidance measures

The proponent has designed the significant amendment to avoid impacts to terrestrial fauna through:

- exclusion of all 12 cave features from the conceptual footprint
- establishing mining exclusion zones (MEZs) to protect:
 - all category 3 ghost bat roosts
 - category 4 ghost bat roosts with evidence of use by ghost bat
- avoidance of barbed wire fencing to reduce entanglement of bats.

2.2.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to terrestrial fauna:

- utilisation of existing infrastructure to minimise the need for vegetation clearing
- implementation of the objectives-based Jimblebar Hub Terrestrial Fauna Environmental Management Plan (Version 1.3, August 2025) (BHP 2025b) including the monitoring of caves within ghost bat cave buffers and inspection of caves prior to disturbance

- installation of reflectors on barbed wires to deter bat interactions.

2.2.8 Rehabilitation measures

The proponent has proposed the following progressive rehabilitation measures:

- undertake progressive rehabilitation
- at closure, fauna habitats will be constructed into rehabilitated areas, where practicable.

2.2.9 Assessment of impacts to environmental values

The EPA considered that the key environmental values for terrestrial fauna proposed to be impacted by the proposal are conservation significant fauna and SRE habitat.

The EPA has assessed the significant amendment in the context of other approved proposals while having regard to the combined and cumulative impact that the implementation of the approved proposal may have on terrestrial fauna environmental values.

Fauna Habitat

The significant amendment comprises clearing of up to approximately 2,067 ha of fauna habitat, of which 145.1 ha are degraded or already cleared areas (BHP 2025a). The proposed indicative clearing extents for each fauna habitat type within the conceptual footprint for the significant amendment, are presented in Table 4, noting that the total loss of habitat is limited to 1921.9 ha, not including 145.1 ha of degraded/cleared areas.

The proponent has approval to clear 10,195 ha of native vegetation under previously issued ministerial statements. As of 2022, approximately 6,225 ha had been cleared, leaving an estimated 3,970 ha potentially available for future clearing. However, it is possible that additional clearing has occurred since 2022. As a result, the actual extent of fauna habitat loss may be greater than currently reflected, as recent clearing activities post-2022 have not been factored into the remaining habitat estimates.

Based on information provided by the proponent, the combined impacts of the significant amendment and approved proposal correspond to losses of approximately less than 30% for all but five fauna habitats within the development envelope (Table 4).

Table 4: Fauna habitats impacted by the proposal

Habitat Type	Mapped Extent within BHP Consolidated Mapping** (ha)	Extent in development envelope (ha)*	Indicative extent proposed to be cleared*** (ha)	Indicative extent loss within development envelope (%)	Combined proposal loss within consolidated mapping (%)^
Breakaway/ Cliff	114.7	114.7	2.5	2.2	10.3
Claypan	106.6	90.5	0	No proposed clearing	42.2
Drainage Area/ Floodplain	3,564.9	3,014	269.1	8.9	27
Gorge/ Gully	189.1	185.3	7.6	4.1	19.6
Hardpan Plain	418.2	406.6	0.8	0.2	48.6
Hillcrest/ Hillslope	8,367.5	6,760.1	1,067.1	15.8	32.6
Major Drainage Line	526.1	486.5	15.9	3.3	33.1
Minor Drainage Line	368.8	328.1	24.7	7.5	21.2
Mulga Woodland	3,554.7	3,322.1	492.9	14.8	49.6
Sand Plain	1,795.5	1,402.9	24.4	1.7	26
Stony Plain	1,588.1	1201.2	16.9	1.4	8.1
Total	20,594.2	17,312	1,921.9	-	-

* Data sourced from Table 9-5 of the ERD (BHP 2025a)

** The consolidated mapping referred to the reviewed and consolidated habitat mapping across BHP tenements, with habitat descriptions aligned between surveys undertaken across the Pilbara and was regularly revised and updated as new survey data became available. Most of the habitat types were mapped within 150 km of the development envelope.

*** Excluding 145.1 ha of degraded/cleared areas

^ Figure 1 in the RTS (BHP 2025b)

Threatened and priority fauna

Ghost Bat

The EPA notes that while the ghost bat are likely to visit the development envelope to forage, critical habitat (maternity/diurnal roost caves with regular occupancy) was not present. All habitat types (except claypan and hardpan plain) were considered suitable foraging habitat. Known roosting habitat (category 2 caves) are located

approximately 2 to 3 km from the development envelope and ghost bat have been recorded on 12 occasions across the development envelope over multiple years. Therefore, the clearing of 1921.1 ha of foraging habitat in the development envelope is likely to be a significant residual impact to the ghost bat. The proponent has proposed to offset the residual impacts to ghost bat habitat through financial contributions to the PEOF, which is reflected in recommended condition B8.

The combined habitat loss from the significant amendment and approved proposal within the mapped extent of the consolidated mapping area (fauna habitat mapping across BHPs WAIO operations) is less than 30% for all habitat types, except major drainage line (33.1%), hillcrest/hillslope 32.6% and mulga woodland (49.6%) habitats (Table 4).

Twelve ghost bat caves (two category 3 and ten category 4) were recorded across the development envelope comprising ten within the significant amendment and two within the approved proposal (caves CJIM-09 and CJIM-20) (Table 9-4 in the ERD).

The category 4 ghost bat cave, CJIM-04, is located 182 m from the conceptual footprint. For project flexibility, this cave may be cleared for the significant amendment (BHP 2025b). No evidence of ghost bat use has been recorded at this cave, therefore it is considered as supporting habitat for the species (Bat Call WA 2021). The EPA has recommended conditions B2-1(1) and B2-4(2) limiting the removal of the one cave and pre-clearance surveys are undertaken to account for the potential presence of ghost bat at least 7 days prior to clearing.

The proponent has proposed 100 m exclusion zones for previously assessed caves for the approved proposal (CJIM-09 and CJIM-20) and has committed to establishing eight MEZs to protect all category 3 caves (100 m MEZ) and all category 4 caves with evidence of ghost bat use (50 m MEZ) (BHP 2024b and 2025a). As ghost bat have been recorded throughout the development envelope and are likely to use these caves opportunistically, the EPA recommends condition B2-1(2), avoiding disturbance to ghost bat caves within proponent proposed MEZs. This condition will ensure the protection of supporting habitat caves within the development envelope.

Subject to the recommended conditions above, the environmental outcome for ghost bat is likely to be consistent with the EPA's objective for this factor.

Northern Quoll

Gorge/gully and breakaway/cliff habitat types were identified as critical denning habitat to the northern quoll (Astron 2023; Biologic 2022). Major drainage line, minor drainage line, hillcrest/ hillslope and stony plain habitat types may also represent supporting habitat for this species (Biologic 2022). Northern quoll have previously been recorded within the development envelope, therefore, the clearing of 10.1 ha of critical denning habitat and 1,124.6 ha of supporting habitat is likely to be a significant residual impact to northern quoll.

The predicted combined impact from the significant amendment and approved proposal within the mapped extent of the consolidated mapping area will result in a loss of critical habitat consisting of 19.6% of gorge/gully and 1.8% of breakaway/cliff and supporting habitat consisting of 33.1% of major drainage line, 21.2% of minor drainage line, 32.6% of hillcrest/hillslope, and 8.1% of stony plain (BHP 2025a).

The EPA advises that the loss of critical and supporting habitats can be counterbalanced by offsets (condition B8). Noting the potential presence of northern

quoll in the development envelope, the EPA recommends conditions B2-2, B2-3 and B2-4(1) to minimise indirect impacts to critical habitat, undertake feral cat control and pre-clearance inspections of critical or supporting habitat prior to clearing by fauna spotters, relocating detected individuals to critical habitat in areas that are not proposed to be cleared.

Subject to the recommended conditions above, the environmental outcome for northern quoll is likely to be consistent with the EPA's objective for this factor.

Greater bilby

The greater bilby was not recorded during the recent surveys conducted in the development envelope (Astron 2023; Biologic 2020b; GHD 2019a; b). However, the species has previously been recorded via an old burrow approximately 1 km east of the development envelope (BHP 2024b). Sand plain habitat type represents primary breeding, foraging and dispersal habitat for the species, however mulga woodland habitat represents secondary breeding and foraging habitat for the species (Biologic 2020a; GHD 2021a).

The proponent considered the greater bilby to possibly occur within the development envelope, despite significant survey effort (BHP 2024b). The EPA is of the view that habitat present is not considered to represent critical habitat for the greater bilby, however sand plain and mulga woodland habitats would provide potential supporting habitat for this species. A total of 517.3 ha of supporting habitat for the species will be cleared for the significant amendment which will result in an 11% reduction in available supporting habitat in the development envelope for the species. The predicted combined loss of suitable habitat from the significant amendment and approved proposal within the mapped extent of the consolidated mapping area is approximately 26.0% of sand plain, 49.6% of mulga woodland, 21.2% of minor drainage line, and 33.1% of major drainage line habitat (BHP 2025a).

The EPA considers the clearing of supporting habitat for this species is likely to be a significant residual impact which can be counterbalanced by offsets (condition B8). This will ensure that the environmental outcome is likely to be consistent with the EPA objective for the greater bilby.

Pilbara Olive Python

The Pilbara olive python was not recorded during the recent surveys conducted in the development envelope (Astron 2023; Biologic 2020b; GHD 2019a; b). However, the species was recorded approximately 2.5 km north of the development envelope (BHP 2024b). GHD (2019b) identified hillcrest/hillslope, gorge/gully, major drainage line and rocky ridgeline habitats as core habitat for this species.

The proponent considered the Pilbara olive python to possibly occur within the development envelope (BHP 2024b). The EPA is of the view that habitat present is not considered to represent critical habitat for the Pilbara olive python, however, hillcrest/hillslope, gorge/gully, major drainage line and breakaway/cliff habitats would provide potential supporting habitat for this species. A total of 1,093.1 ha of supporting habitat will be cleared for the significant amendment which will result in a decline of 3.3% of supporting habitat within the remaining extent in the development envelope. The predicted combined impact from the significant amendment and approved proposal within the mapped extent of the consolidated mapping area will

result in a loss of supporting habitat consisting of 33.1% of major drainage line, 19.6% of gorge/gully, and 1.8% of breakaway/cliff (BHP 2025a).

The EPA considers the clearing of supporting habitat for this species is likely to be a significant residual impact which can be counterbalanced by offsets (condition B8). This will ensure that the environmental outcome is likely to be consistent with the EPA objective for the Pilbara olive python.

Pilbara Leaf-nosed bat

The Pilbara leaf-nosed bat was considered possible to occur in the development envelope and was recorded approximately 24 km northwest of the development envelope (Astron 2023; Biologic 2020b). No critical habitat was identified in the development envelope and the occurrence of this species in the area is expected to be restricted to foraging events only (Astron 2023; Biologic 2020b). Supporting habitat for foraging may include hillcrest/hillslope, major drainage lines and mulga woodland habitat types. Due to the absence of Pilbara leaf-nosed bat records during surveys and the widespread availability of supporting habitat in the Pilbara, the proposal is not expected to significantly impact this species.

Grey Falcon and garganey

The grey falcon has been recorded approximately 10 km northwest of the development envelope and is likely to utilise the habitats to be impacted by the significant amendment for foraging and potentially for nesting purposes (Biologic 2020b). Major drainage line represents potential critical breeding habitat (15.9 ha) and hillcrest/hillslope, sand plain, stony plain, mulga woodland, drainage area/floodplain and minor drainage line represents supporting habitat (1,895.1 ha) for the species in the development envelope (Astron 2023; BHP 2025a).

The EPA considers that the residual impacts on potential breeding and supporting habitat for this species is unlikely to be significant, given the species was not recorded within the development envelope during surveys and large areas of potential breeding and foraging habitat remain outside of the development envelope.

The EPA considers that inspections of drainage line habitat, which may contain potential nesting trees, should be undertaken to ensure grey falcon nests are not being used before clearing is undertaken (recommended condition B2-4(3)). This condition would ensure consistency with the EPA objective for terrestrial fauna.

A garganey (*Anas querquedula*) was recorded by the artificial water feature (WJIM-03) in the development envelope, located within the southwest corner of the approved proposal area for MS1126 (BHP 2025a). The presence of this species in the Jimblebar Hub has not previously been assessed. The EPA considers that the species is unlikely to rely on habitats within the development area and that the significant amendment is unlikely to have a significant impact on the garganey.

Priority and Other Specifically (OS) Protected Fauna Species

The proposed development is expected to have minimal impact on priority and other specifically protected fauna species occurring in the Pilbara region.

The spotted ctenotus (*Ctenotus uber* subsp. *johnstonei*) (P2), brush-tailed mulgara (*Dasycercus blythi*) (P4) and western pebble-mound mouse (*Pseudomys chapmani*)

(P4) have previously been recorded in the approved proposal area. Clearing for the significant amendment will result in a decline of 42.1 ha of suitable habitat for the spotted ctenotus habitat and brush-tailed mulgara and 1,067.1 ha of suitable habitat for the western pebble-mound mouse.

The EPA has determined that the spotted ctenotus (P2), brush-tailed mulgara (P4), and western pebble-mound mouse (P4) are unlikely to be significantly impacted by the significant amendment, as they have a relatively broad distribution in the Pilbara and limited records within the proposed clearing area.

Short Range Endemic (SRE) Fauna

The significant amendment proposes to impact 15.5% (1,074.7 ha) of medium to high prospective SRE habitat (gorge/gully and hillcrest/hillslope) for SRE invertebrate fauna habitat in the development envelope (BHP 2025a; Biologic 2020a; b). The predicted combined impact from the significant amendment and approved proposal is approximately 19.6% of the mapped extent of the consolidated mapping area of gorge/gully habitat, and approximately 32.6% of the mapped extent of hillcrest/hillslope habitat.

Two confirmed SRE species were recorded outside of the conceptual footprint of the significant amendment, *Anidiops* sp. MYG286-DNA (recorded within previously assessed areas of the approved proposal) and *Conothele* sp. MYG279. Both species are not expected to be impacted by the significant amendment and there are records of both species throughout the Pilbara (BHP 2025b).

Of the 19 potential SRE species recorded within the development envelope, five (one isopod and four pseudoscorpion species) were recorded inside and outside of the conceptual footprint (BHP 2025a; Biologic 2020a; b). The five species include: *Buddelundia* sp. 'Biologic-ISOP014', *Austrohorus* sp. 'Biologic-PSEU024', *Austrohorus* sp. 'Biologic-PSEU025', *Indolpium* sp. 'Biologic-PSEU026', and *Indolpium* sp. 'Biologic-PSEU027'. These species are not restricted to one locality and are likely to occur in other areas of the development envelope.

The EPA is of the view that impacts from the significant amendment are unlikely to significantly impact the above species and considers habitats from which the potential SREs were recorded are sufficiently represented outside of the impact areas. The significant amendment is unlikely to have a significant impact on these taxa.

Cumulative Impact Assessment

The proponent has assessed the cumulative effects of the proposal by considering impacts of the significant amendment together with approved BHP projects and foreseeable BHP projects in the Eastern Pilbara, including Mt Whaleback (commenced in 1968 and subsequently approved under NVCP; habitats provided here reflect extents within the NVCP 5617), Eastern Ridge (first commenced in 1988, most recently revised in 2016), Western Ridge and Orebody 32 Below Water Table (both approved in 2023), Orebody 29/30/35 Significant Amendment (under assessment), and Orebody 32 Creek discharge (future) (BHP 2025b).

Across the Eastern Pilbara, the greatest cumulative impact (>1,000 ha) from approved and foreseeable BHP projects in the Eastern Pilbara are hillcrest/hillslope (5,551.8 ha), stony plains (1,702.5 ha), drainage area/floodplain (1,375 ha) and

mulga woodland (1,359.7 ha) (BHP 2025b). Impacts to mulga woodlands are around 36%, with drainage area/floodplain and hillcrest/hillslope at around 19% cumulative impacts.

The proposal will result in significant residual impacts to threatened fauna species (ghost bat, northern quoll, greater bilby and Pilbara olive python). While cumulative impacts per fauna species was not quantified by the proponent, impacts to these threatened fauna species may occur from other approved and foreseeable BHP projects in the Eastern Pilbara. The EPA notes that at a bioregional scale, implementation of this significant amendment would contribute to cumulative impacts to conservation significant fauna, including the ghost bat, northern quoll, greater bilby and Pilbara olive python through habitat loss. Given the context of cumulative impacts and ongoing pressures of current and future mining in the Pilbara, the EPA considers that offsets are necessary to ensure that the cumulative impacts to habitat loss are counterbalanced.

The EPA advises that implementation of this significant amendment should be subject to its recommendation for offsets (see section 5) as well as avoidance and mitigation measures to minimise impacts (conditions B2-1, B2-2, B2-3 and B2-4). The combination of monetary contributions from this and other proposals in the bioregion, to deliver on-ground projects coordinated through PEOF, are expected to address cumulative impacts and provide environmental benefits across the Pilbara region.

2.2.10 Summary of Key Factor Assessment and Recommended Regulation

The EPA has considered the likely residual impacts of the significant amendment on terrestrial fauna environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 5.

The EPA has also considered the principles of the Environmental Protection Act 1986 (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 5: Summary of assessment for terrestrial fauna

Residual impact or risk to environmental value	Assessment finding or Environmental outcome	Recommended conditions and DMA regulation
1. Direct impact to the following threatened fauna habitat types: • 2.5 ha of breakaway/cliff habitat • 7.6 ha of gorge/gully habitat.	The EPA considers the loss of conservation significant fauna habitat is a significant residual impact. The EPA advises that with limits of clearing fauna habitat types and avoidance of impacts through the application of mining exclusion zones, the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna. The significant residual impacts are also expected to be counterbalanced by offsets.	Condition A1 (Limitations and extent) Sets limits of disturbance to important fauna habitat types. Conditions B2 (Terrestrial Fauna) Sets limits of disturbance to important fauna habitat types. No disturbance activities within the MEZs. Pre-clearance inspections and engage fauna spotters during clearing activities. Implement management measures to avoid and mitigate impacts to conservation significant fauna species. Condition B8 (Offsets) Contribution to PEOF for clearing conservation significant fauna habitat.
2. Indirect impacts to conservation significant fauna through feral fauna predation/ competition, weed invasion, dust, vehicle strike and collision with barbed wire fence.	The proposal has the potential to result in indirect impacts on threatened fauna and habitat through feral fauna predation/ competition, weed invasion, dust, vehicle strike and collision with barbed wire fence. Active management is required to mitigate these impacts. The EPA advises that the residual impact should be subject to reasonable implementation conditions to ensure that the environmental outcome is consistent with the EPA objective for this factor.	Condition B2 (Terrestrial fauna) Minimisation of impacts to critical habitat from indirect impacts. Pre-clearance inspections and engage fauna spotters during clearing activities. Requirement to undertake feral cat control. Requirement to install barbed wire with suitable bat deflectors. Speed limits within 1 km of threatened fauna habitat.

2.3 Inland Waters

2.3.1 Environmental objective

The EPA environmental objective for *to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected* (EPA 2018).

2.3.2 Investigations and surveys

The investigations and surveys used to inform the assessment of the potential impacts to inland waters are provided in Appendix E.

2.3.3 Assessment context: existing environment

Groundwater flow

The significant amendment is located within the central valleys of the Jimblebar Hub area. The development envelope is characterised by regional aquifers including the weathered Paraburdoo Members of the Wittenoom Formation and Tertiary Detritals that range between 200 to 360 m in thickness across the development envelope. At the local scale, the orebody aquifers are characterised by the Marra Mamba Formation and Brockman Iron Formation, reaching depths of approximately 110 m to 140 m BWT (BHP 2025a). The orebody and regional aquifers are mostly separated by the various shale members of the Wittenoom Formation and Brockman Iron Formation (BHP 2025a).

Regional and local fault lines and structures play a significant role in the Jimblebar groundwater system and generally behave as barriers to flow. The proponent's hydrogeological studies have shown that no hydraulic connection exists between Jimblebar mine (western and eastern compartment – Figure 7), and the western orebodies of OB31 and OB17/18 due to the presence of the Wheelarra Fault (BHP 2025a). The inferred general direction of groundwater flow in the eastern compartment is from south to north. The groundwater flow is southerly in the western compartment.

West of the Wheelarra Fault, studies and investigations indicate that while OB17 and OB31 are considered hydraulically connected, local geological features create hydraulic barriers restricting groundwater flows between the orebody aquifers of OB18 and OB17, with localised radial flow towards OB18 and OB31, where dewatering activities occur. Groundwater flows in this area are characterised by groundwater flows from west to east in the regional aquifer and then north into OB31.

The regional aquifer is continuous from the east, at OB31 to the west at Ethel Gorge. There are at least two partial flow barriers (dykes), forming distinct aquifer compartments, with OB31 and OB17 deposits in the compartment furthest from Ethel Gorge defined by flow barriers on all sides. Prior to development of the approved proposals, it was likely that there was only a low groundwater flow from east to west towards Ethel Gorge. With dewatering and operation of Orebody 18 (Ninga) managed aquifer recharge (MAR), the flow direction has reversed.

Groundwater quality

Groundwater quality sampling and investigations indicates that groundwater at the eastern Jimblebar mine is generally fresh, ranging between 740 and 1,130 mg/L total dissolved solids (TDS), with a pH ranging between 6.8 and 8.1 (BHP 2025a).

Groundwater quality in the western OB18/17 and OB31 area is also fresh, ranging between 560 and 740 mg/L TDS, with a pH ranging between 6.7 and 8.2 (BHP 2025a).

PFAS was detected at very low levels from only four groundwater samples with all at least 20 times below the revised ANZG (2023) ecological freshwater 99% species protection guideline (BHP 2025a). PFAS was also detected at very low levels in the Ethel Gorge aquifer which support the unique and diverse stygofauna assemblage *Ethel Gorge aquifer Stygobiont community Threatened Ecological Community* (Ethel Gorge TEC). The few detections of PFAS are similar or lower than the PFAS concentrations detected in the Ethel Gorge aquifer (BHP 2025a).

Groundwater levels

Groundwater abstraction in the Jimblebar Hub area commenced in 1994 to support water supply and mining operations. Pre-development groundwater levels were deep, generally greater than 50 mbgl in the east to greater than 100 mbgl in the west. In 2011 and 2015, mine dewatering activities commenced at Jimblebar mine and OB17/18 and OB31, respectively.

Since dewatering commenced, observed groundwater drawdown in the Jimblebar mine area is generally greater than 40 m in the west and approximately 1.5 m in the east near Caramulla Creek (BHP 2025a). Currently, mining and dewatering are only active at the Jimblebar mine and OB31 mine sites, with mining and associated dewatering having ceased at OB17/18.

Approved surplus mine dewater water management includes discharge to Ophthalmia Dam managed aquifer recharge (MAR) system (up to 32.625 GL/a), groundwater injection of up to 10.95 GL/a surplus water in the Caramulla MAR with groundwater levels to remain at or below 25 mbgl and up to 13.14 GL/a surplus water injection in the Orebody 18 (Ninga) MAR (previously named Orebody 18 MAR scheme) with groundwater levels to remain at or below 10 mbgl.

The Ophthalmia Dam system is located approximately 20 km west of the Jimblebar Hub and comprises the dam, infiltration basins and recharge ponds. The key environmental value, which are reliant on discharge of surplus water to Ophthalmia Dam include the Ethel Gorge alluvial and calcrete aquifer that support the Ethel Gorge TEC.

Operating since 1981, the Ophthalmia Dam system continues to maintain groundwater levels nearer to natural conditions in the Ethel Gorge TEC and is reliant on approved surplus water discharge from the proponent's Eastern Pilbara mining area (BHP 2023b).

Since dewatering commenced in western mine area in 2015, observed groundwater drawdown is up to 35 m at OB18 and greater than 60 m at OB17 and OB31. Current groundwater levels range from approximately 50 - 95 mbgl at OB31 and greater than 100 mbgl at OB17/18 (BHP 2025a). The groundwater levels in the Ethel Gorge aquifer have not shown any response to the groundwater abstraction for dewatering

OB31 due to the presence of at least two dykes and the operation of Orebody 18 (Ninga) MAR.

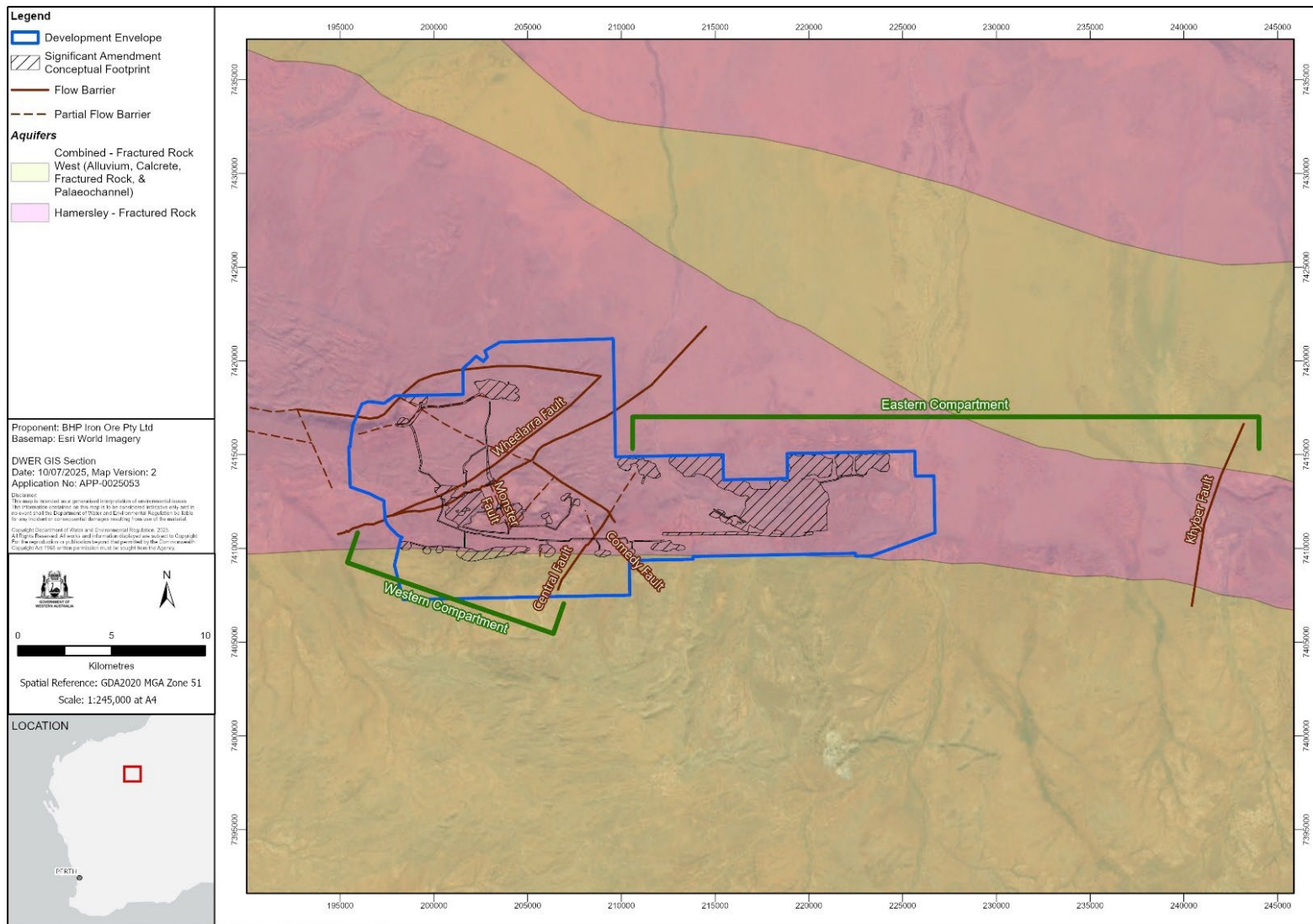


Figure 7: Jimblebar mine area hydrogeological compartmentalisation

Surface Water

The significant amendment is located within the Upper Fortescue River Basin, within both the Jimblebar Creek and Caramulla Creek surface water catchment areas. Two major ephemeral tributaries of the Fortescue River, Jimblebar Creek and Caramulla Creek, flow north through the proposed development envelope.

Currently, surplus water discharge to Jimblebar Creek is approved from Jimblebar Mine and OB31, as a contingency. The surface water quality in these creeks, when flowing, is fresh with neutral pH. Recent total dissolved salts (TDS) were measured at less than 600 mg/L with pH between 6.8 and 7.4 (BHP 2025a).

Several minor ephemeral surface water features have been identified within the proposed development envelope, including one ephemeral pool, Innawally Pool (Figure 8). Innawally Pool is a semi-permanent pool located in the Jimblebar Creek main channel and receives runoff from the upstream creek system and from some minor local drainage lines. Innawally Pool is considered to be supported by a perched aquifer feature and is not connected with the regional aquifers. Recent studies indicate the regional depth to groundwater is approximately 70-80 m below the base of the pool. The other nine surface water features within the development envelope are all considered to be temporary, forming after large rainfall events. Due to the very deep groundwater levels in the development envelope, none of these features are considered to be groundwater dependent.

The potential impacts to groundwater dependent ecosystems and conservation significant species are discussed further under flora and vegetation in section 3.1.9 of this report.

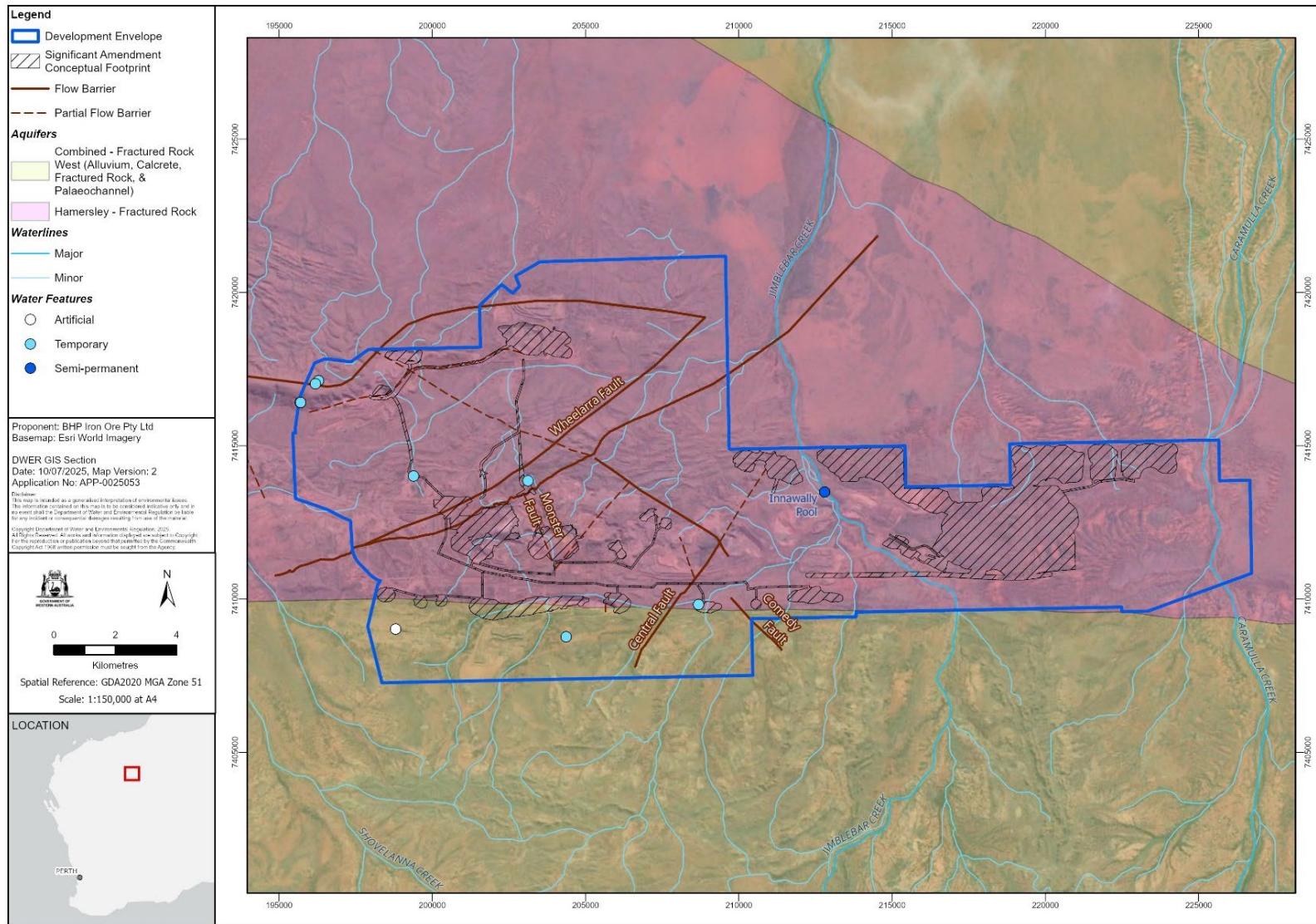


Figure 8: Jimblebar mine area hydrology

2.3.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the proponent's RTS (BHP).

Public consultation raised concerns about potential changes to the water quality in Ophthalmia Dam that supports the Ethel Gorge TEC, seepage from in-pit tailings storage facilities, adequacy of acid mine drainage (AMD) investigations and risk assessment, and water quality effects from post-closure mine pit lakes.

The key issues raised and how they have been considered in the assessments are described in sections 2.3.5 to 2.3.9.

2.3.5 Potential impacts from the proposal

The significant amendment has the potential to result in the following direct impacts on inland waters from:

- abstraction of groundwater and changes to regime at East Jimblebar deposit
- changes in groundwater quality and quantity due to storage of tailings in disused mine pits at OB 17 and OB18, resulting in groundwater seepage and mounding
- alteration of surface water regimes due to catchment reduction clearing for mine infrastructure associated with the East Jimblebar mine
- changes to groundwater and surface water quality due to mineral waste management, OSAs and formation of pit lakes post closure.

The EPA notes that although the significant amendment includes an increase to the approved groundwater abstraction (by up to 23.8 GL/a) for mine pit dewatering, no increases are proposed to the approved limits and extents for surplus water management (i.e. surface discharge along creeklines or increase volumes aquifer injection to the Caramulla MAR or Orebody 18 (Ninga) MAR of mine dewater previously assessed and approved under Part IV and Part V of the EP Act. The proposed beneficiation plant will use surplus water generated from the increase in abstraction (dewatering), which minimises the amount of surplus water to be managed via discharge to the dam, other MAR or creek discharge. As a result, the increase in dewatering rate for the Jimblebar east pits is offset by the increased water demand for beneficiation and there is no change to the proposed discharge of surplus water.

2.3.6 Avoidance measures

The proponent is of the view that no additional avoidance measures are required for the significant amendment as no new significant water values have been identified since the assessment of the approved proposals. Existing avoidance measures include:

- avoid impacts to Innawally Pool from surplus surface water discharge.

2.3.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed the following measures to minimise impacts to Inland Waters:

- implement the Jimblebar Hub Water Management Plan (WMP) (version 1, dated December 2023) (BHP 2023i), including minimisation measures (i.e. controlled discharge rates and monitoring) for surplus water at the hub scale (including for Jimblebar Creek, Caramulla Creek and the Caramulla aquifer).
- implement Eastern Pilbara Water Resource Management Plan (EPWRMP) (version 8, dated December 2023) (BHP 2023b), including provisions for groundwater level and groundwater salinity criteria (triggers and thresholds), to maintain groundwater levels and salinity in the Ethel Gorge aquifer within historical levels of variation.

Rights in Water and Irrigation Act 1914

Currently, groundwater abstraction within the development envelope is licenced under groundwater licence (GWL 158795) with an approved annual abstraction rate of 26.5 GL/a for Jimblebar approved proposal, 2.8 GL/a for OB 18 and 16.2 GL/a for OB31 (total approved abstraction volume of 45.5 GL/a). To increase the approved groundwater abstraction rates for mine dewatering for the development of the East Jimblebar deposit (by up to 23.8 GL/a), the proponent would be required to obtain or amend approvals under the *Rights in Water and Irrigation Act 1914* (RiWI Act).

In accordance with the RiWI Act, a GWOS will be required as part of the groundwater licence, which includes monitoring, management and reporting requirements to ensure that the groundwater abstraction and drawdown can be monitored and managed.

Part V, Division 3 of the EP Act

The proponent has an existing Part V of the EP Act licence (L5415/1988/9), which covers the Jimblebar Hub (including the approved activities at Jimblebar, Orebody 31 and Orebody 18 mines). The current licence authorises surplus water management, including surplus mine dewatering discharge to Ophthalmia Dam, Caramulla Creek and Jimblebar Creek, as well as the Orebody 18 (Ninga) and Caramulla MAR.

The significant amendment includes a new beneficiation plant at the Jimblebar Hub and associated in-pit tailings storage facilities (TSFs), that will receive tailings from the proposed beneficiation plant. A Works Approval and Licence amendment under Part V of the EP Act will be required to facilitate these additional mine activities, specifically through the amendment to Category 5 of the licence. A water quality management plan can be required under the Part V licence that includes quarterly water quality monitoring at emission point of surplus dewatering water, when discharging or reinjecting.

2.3.8 Rehabilitation measures

The proponent has proposed the following progressive rehabilitation measures:

- implement the revised MCP (BHP 2023h) which will be amended to include the additional aspects of the significant amendment (mine pit lakes and in-pit

TSFs), addressing how mine pits and constructed landforms (principally OSAs) will be designed, constructed and rehabilitated, to ensure they are safe, stable and non-polluting.

- Implement effective management measures of potentially acid-forming materials (addressed through the MCP).

2.3.9 Assessment of impacts to environmental values

The EPA has assessed the significant amendment in the context of the approved proposals, while having regard to the combined and cumulative effect that the implementation of the significant amendment may have on inland waters.

The EPA has determined that the key environmental values for inland waters are likely to be impacted by:

- groundwater drawdown and mounding
- decline in groundwater quality
- altered surface water flow
- decline in surface water quality.

Groundwater drawdown

Groundwater abstraction in the approved proposal currently occurs at the Jimblebar and OB31 mines (dewatering has ceased at OB17/18 deposits).

Since dewatering commenced at the Jimblebar mine in 2011, observed groundwater drawdown in the Jimblebar area is greater than 40 m in the west between the Wheelarra and Central faults and decreases to the east (approximately 1.5 m since implementation of the Caramulla MAR scheme). Current groundwater levels across the Jimblebar mine range between approximately 175 mbgl in the west to 50 mbgl in the east near Caramulla Creek (BHP 2025a).

Since dewatering commenced at OB17/18 and OB31, observed groundwater is up to 35 m at OB18 and >60 m at OB17 and OB31. Current groundwater levels range from approximately 50 – 90 mbgl at OB31 and greater than 100 mbgl at OB17/18.

The significant amendment includes the development of the East Jimblebar deposit, located in the Jimblebar mine, and requires an increase in mine dewatering of 23.8 GL/a to allow for below water table mining. No additional abstraction is proposed at OB 31 and 17/18.

Due to groundwater levels being at least 50 mbgl and recharge responses are only observed at surface water features after significant rainfall and runoff events, the EPA is of the view that the hydraulic connection between surface water features and groundwater is likely to be poor. Given this the EPA does not expect surface water features, including Innawally Pool, a culturally significant semi-permanent pool, to be affected by the additional abstraction at the East Jimblebar deposit.

Further, the EPA considers that with westward flow being restricted due to the presence of the Wheelarra Fault (BHP 2025a) and dolerite dykes, including the Comedy and Central Fault lines (BHP), it is unlikely that Ethel Gorge TEC will be impacted by the additional abstraction.

The EPA understands that the significant amendment is predicted to result in an additional vertical drawdown up to 20 to 50 m compared to the previously assessed Part IV drawdown. The combined effect, which included the combined dewatering extents of the approved proposal and the significant amendment, indicates a maximum vertical drawdown of up to 25 to 100 m (Figure 9). The additional lateral drawdown extent from the combined proposal is expected to only increase eastward until it reaches the hydraulic barrier (Khyber Fault).

Noting the above, the EPA has recommended conditions to limit abstraction (A1-1) and to maintain groundwater levels in the Ethel Gorge TEC (B3-1(1)) to ensure the expected environmental outcomes are likely to be consistent with the objective for inland waters.

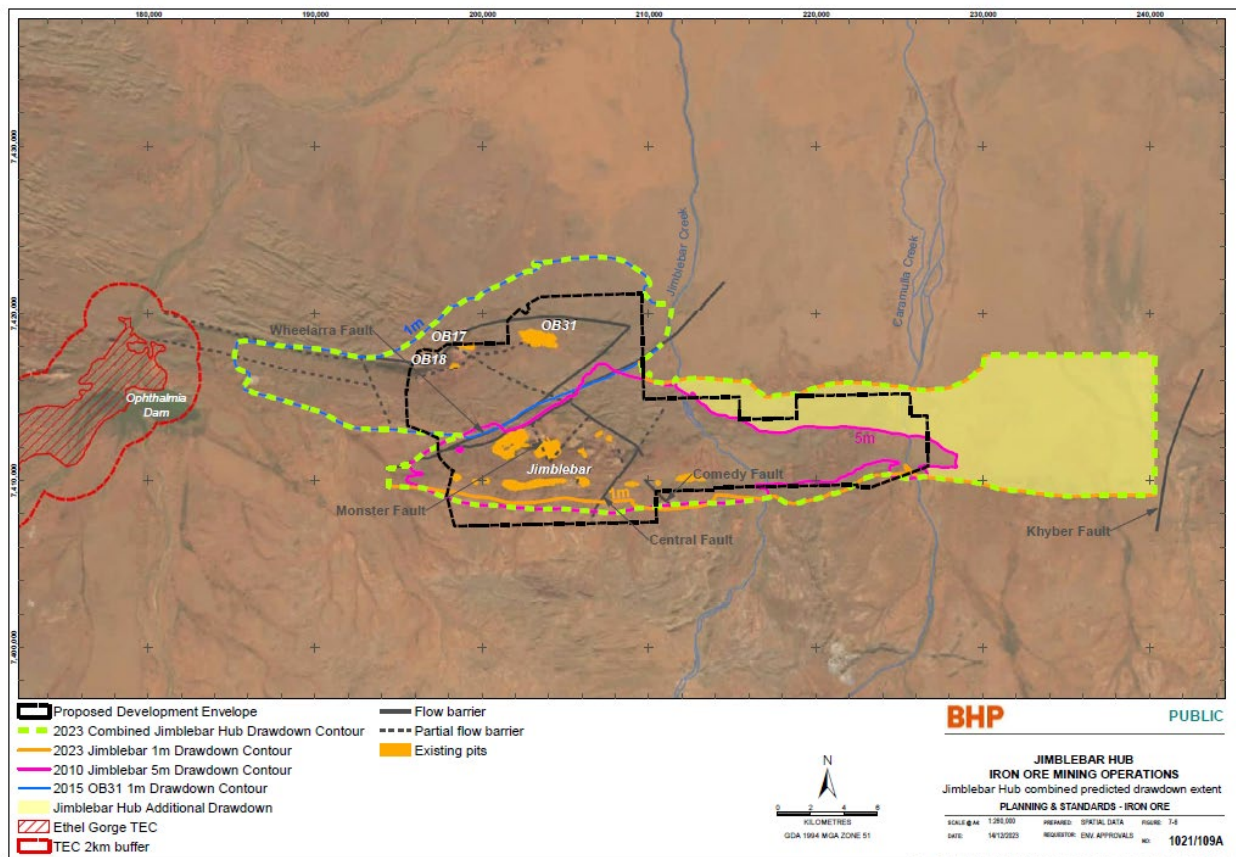


Figure 9: Jimblebar mine combined modelled drawdown extent (BHP 2025a)

Groundwater mounding and quality (seepage)

The significant amendment includes a new beneficiation plant at the Jimblebar Hub and the creation of short-term in-pit tailings storage facilities (TSFs) in the disused OB17 (Swan) and OB18 (De Grey) pits, and long term in-pit TSFs at OB31, Jimblebar South and Jimblebar (Wheelara). Seepage from the proposed in-pit TSFs has the potential to cause changes to groundwater levels (mounding) and changes to surrounding environment's groundwater quality.

The EPA notes that the geochemical analysis indicated that tailings samples and associated liquids from Jimblebar are likely non-acid forming, have near-neutral pH, low salinity and low metal and nutrient concentrations. Investigations indicated acidic conditions are unlikely at OB17 (Swan), but possible in the first few weeks at

OB18 (De Grey). Fresh to brackish conditions are predicted at OB18 (De Grey) and fresh to saline (seasonal due to evapoconcentration).

The proponent's hydrogeological modelling, to assess the potential for groundwater level rise (mounding) beneath the proposed in-pit TSFs as a result of seepage, indicated that seepage from the OB17 (Swan) will be limited to beneath the pit, due to the combination of relatively high hydraulic conductivity beneath the pit and will not result in any connection of groundwater to surface water features (BHP). Seepage from the OB18 De Grey in-pit TSFs has the potential of coming to surface just beyond the pit crest in the south and east (particularly in depressions that are lower than the top of tailings). However, as the investigations have indicated that material directly beneath the OB18 De Grey pit is unsaturated and approximately 60 m lower than the water level of the proposed in-pit tailings, the proponent has assumed that the water will flow directly downwards, rather than laterally through the sub-surface to the south and east.

Considering the low likelihood and limited extent of mounding occurring, which will not result in any connection of groundwater to the surface water features or groundwater dependent ecosystems being known in the vicinity of potential mounding (BHP 2023f), the EPA is of the view that the expected outcomes are not likely to be inconsistent with the EPA objective.

The proponent's studies predict that the addition of the beneficiation process may result in minor exceedances of TDS, Barium and Alkalinity in the tailings waste stream proposed to be stored with the OB17 (Swan) and OB18 (De Grey) pits (BHP 2025a). The proponent's modelling indicates that due to the hydraulically connectivity, seepage from the OB17 Swan in-pit TSF will likely reach the approved OB31 borefield that is actively abstracted and discharge to the Ophthalmia Dam and Orebody 18 (Ninga) MAR scheme (BHP).

Monitoring data recorded at OB31 found background concentrations of all three analytes (TDS, Barium and Alkalinity) in the natural groundwater to be elevated and either close to or already recording minor exceedance of guideline values. Furthermore, concentrations of all three analytes have been measures to be within the range of concentrations recorded at OB31 discharge locations (OB31 creek discharge point and Ophthalmia Dam discharge point) and in the ambient groundwater measured at the Orebody 18 (Ninga) MAR (BHP).

Furthermore, it is noted that surplus water from OB31 that will be discharged to Ophthalmia Dam will be diluted with surplus water from other mines that are discharged to Ophthalmia Dam, as well as rainfall and surface water flows from the Fortescue River and tributaries, before infiltrating into the Ethel Gorge aquifer system (and TEC) (BHP 2025a).

Noting the above, the EPA considers that there is a low to medium risk of potential impacts to the groundwater quality at the Ethel Gorge aquifer (and TEC) from surplus dewater discharge affected by seepage from the proposed in-pit TSFs. However, the EPA considers that this risk is able to be managed appropriately to ensure the expected environmental outcome is unlikely to be inconsistent with the objective for inland waters subject to recommended conditions B3-1(1) requiring water quality to be maintained in the Ethel Gorge aquifer and the statutory provision of Part V of the EP Act that provide for the management and monitoring of discharge

water quality, including provisions for reporting of exceedances of trigger values and details of investigations conducted and remedial actions.

Water Quality (AMD and pit lakes)

The significant amendment includes the new East Jimblebar pit and new OSAs north of East Jimblebar mine area. The proponent studies and AMD risk assessment for the Jimblebar Hub has identified moderate to high risk of generating AMD associated with mining the proposed East Jimblebar deposit from management of waste rock and due to pit rock wall exposure leaching into the surface or groundwater.

The proponent notes that the proposed OSAs are expected to be internally draining and management of problematic waste material during operations will be undertaken in accordance with internal AMD standards and procedures and the Jimblebar Hub MCP (BHP 2023h), including bunding and measures to minimise erosion and sedimentation. Management approaches and activities during operations include undertaking additional geochemical testing and incorporate geochemical characterisation into mining models and encapsulate PAF material within OSAs or pits to minimise oxidation and the potential to generate AMD.

Groundwater modelling and analysis for the significant amendment predicts the formation of permanent pit lakes in the impact areas of the combined proposal (BHP). Pit lakes have the potential to contaminate groundwater resources in the aquifer compartment in which they occur. The extent of the pit lakes and to which pits are backfilled will depend on the available waste rock material.

The EPA notes that groundwater modelling and analysis for the significant amendment predicted groundwater will flow into the pit lake and the pit lake would remain a groundwater sink. The assessment concluded that all pit lakes will be terminal groundwater sinks, groundwater will flow into the pit lakes, away from the regional aquifers and any sensitive receptors. Therefore, saline water is not expected to migrate from the pit lake into the groundwater system, and there is a low risk from water quality changes.

The Jimblebar Hub MCP (BHP 2023h) contains the management of pit voids at closure, including those used as in-pit TSFs. The storage of tailings in pit voids (in-pit TSFs) is viewed as a measure to contribute to the backfill of pits (and will minimise pit lakes). The proponent is of the view that the pit lakes are not expected to become acidic as any waste material that is potentially acid forming (PAF) is covered and encapsulated. Current studies reviewing the AMD risk have shown that acidity generation rates from wall rock, encapsulated PAF and tailings are low. Closure planning for TSFs incorporates a risk assessment for each facility.

The EPA notes that the proponent has committed to an assessment of the impacts to pit lake quality in future iterations of the MCP and the backfill strategy will be refined to manage any significant impacts to receptors. Furthermore, the proponent has committed to prioritising backfill to mine voids, taking into account the potential for residual groundwater drawdown to impact ecohydrological receptors and pose an unacceptable risk to the environment, impact to water quality from PAF materials (if present) and the potential to reduce footprint. Backfill to pit crest will also be prioritised for pits close to creeks in order to avoid inundation during heavy rainfall events, where suitable engineering controls cannot be achieved.

The EPA is of the view that the overall risk of changes to groundwater quality from AMD for the significant amendment is expected to be low subject to the application of standard AMD management practices and revision and implementation of the Jimblebar Hub MCP during operations and post-closure.

The EPA advises that the significant amendment's impacts to groundwater quality can be managed through the implementation of condition B6-6, requiring to update and submission of the Jimblebar Hub MCP (BHP 2023h) in accordance with the Department of Mines, Petroleum and Exploration Guideline for Mine Closure Plans March 2025 (or any subsequent revisions of the guidelines).

Altered catchments and surface water flow

The EPA notes that no increases are proposed to the limits or volumes of surface water discharge to creek lines than what was previously assessed and approved under Part IV and Part V of the EP Act. This includes the already approved discharge volumes to creek lines and associated extent of the wetting front along Jimblebar Creek and Caramulla Creek.

The significant amendment has the potential to change surface water regimes by disrupting natural surface flows and reducing the availability of surface water (runoff) downstream directly impacting on existing water flows and volumes within the Jimblebar Creek catchment, Caramualla Creek catchment and the Upper Fortescue River catchment.

The significant amendment would result in a maximum potential reduction of approximately 2.4% within the Jimblebar Creek catchment upstream of Innawally Pool and upstream of Fortescue River confluence. The loss in the Caramualla Creek catchment and the Upper Fortescue River Basin is predicted to be 0.4% and 0.05%, respectively. These reductions are all considered within the natural variation of seasonal runoff.

When considering the combined effect, the maximum estimated reduction in surface water availability has been modelled for the Jimblebar Creek catchment is up to 8% upstream of Innawally Pool and 5.9% upstream of Fortescue River confluence. The combined loss in the Caramualla Creek catchment and the Upper Fortescue River Basin is predicted to be 0.25% and 0.21%, respectively. The EPA notes that these reductions are considered of similar magnitude to the reduction in surface water availability for the approved proposals.

Given the high variability in rainfall patterns in the Pilbara region, that other tributaries' flow will not be impacted by the significant amendment, the EPA considers that potential impacts from the overall reduction in volume from the significant amendment and the combined proposal are unlikely to be significant.

Noting the above, the EPA considers that the proponent's management measures and recommended condition B3-2(1) of no impacts to Innawally Pool, the expected environmental outcome resulting from changes to surface water flows is likely to be consistent with the factor objective.

Cumulative impacts

The proponent's existing mining operations at the Jimblebar and Newman hubs (including from the Jimblebar Hub, OB32 BWT and Western Ridge) are the only proposals that are located within the same groundwater and surface water

catchments as the combined proposal. The nearest third-party iron ore mining operation is Rio Tinto's Hope Downs 4 operation, located 105 km to the northwest of the Proposal in the central Pilbara region.

The proponent manages the Ethel Gorge aquifer (and TEC) at the regional scale through the EPWRMP due to the potential for cumulative impacts from multiple BHP mines. The proponent's surplus discharge modelling indicates that Ophthalmia Dam is likely to have sufficient capacity to receive the approved cumulative surplus discharge from approved operations, with the approved three-month controlled release from Ophthalmia Dam.

As previously discussed, the potential impacts from the cumulative groundwater drawdown from the combined proposal is predicted to extend laterally to the east to the hydraulic barrier (Khyber Fault) and vertically, by up to 25 to 50 m, compared to the previous Pt IV assessment of approved proposals drawdown for the Jimblebar Mine. When considering drawdown extent from other BHP projects in region, the proponents studies indicate that drawdown from these projects will not overlap the predicted drawdown extent for the proposal (BHP 2025a). Furthermore, drawdown will not extend to the Ethel Gorge aquifer in the west and groundwater levels in the Ethel Gorge aquifer (and TEC) will be maintained.

2.3.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the proposal on inland waters environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can mitigate potential inconsistency with the EPA factor objective. The EPA assessment findings are presented in Table 6.

The EPA has also considered the principles of *the Environmental Protection Act 1986* (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 6: Summary of assessment for inland waters

Residual impact		Assessment finding	Recommended conditions and DMA regulation
1.	Groundwater drawdown abstraction.	The drawdown associated with groundwater abstraction for mine pit dewatering is not expected to impact significant environmental values or other nearby licensed bore users. The EPA advises that subject to recommended conditions and regulation under RiWI Act, the environmental outcome is likely to be consistent with the EPA objective for inland waters.	Condition A1-1 (Limitations and extent of proposal) Groundwater abstraction limit. Condition B3 (Inland Waters and Subterranean Fauna) Maintaining habitat, groundwater levels and water quality in the Ethel Gorge aquifer to support the stygofauna habitat of the Ethel Gorge TEC.

Residual impact		Assessment finding	Recommended conditions and DMA regulation
			DMA regulation Licensing of water abstraction under the RiWI Act.
2.	Groundwater Quality (Seepage)	Surplus dewater discharge (from mine pit dewatering of OB31) to Ophthalmia Dam and Orebody 18 (Ninga) MAR scheme has the potential to cause groundwater quality changes in Ethel Gorge aquifer that supports the Ethel Gorge TEC. The EPA advises that subject to recommended conditions of maintaining groundwater levels, and water quality in the Ethel Gorge aquifer combined with regulation under Pt V for in-pit tailings, and surplus water discharge to MARs, creeks and Ophthalmia Dam, the environmental outcome is likely to be consistent with the EPA objective for inland waters.	Condition B3 (Inland Waters and Subterranean Fauna) Maintaining groundwater levels and water quality in the Ethel Gorge aquifer to support the stygofauna habitat of the Ethel Gorge TEC. DMA regulation Part V EP Act for in-pit tailings, and surplus water discharge to MARs, creeks and Ophthalmia Dam.
3	Indirect impacts to surface water pools from changes in surface water catchment.	The potential residual impacts relate to ephemeral surface water flow regimes. The EPA is of the view that potential impacts are minor and that subject to the recommended condition (no impacts to Innawally Pool) combined with ongoing monitoring and management, environmental outcome is likely to be consistent with the EPA objective for inland waters.	Condition B3 (Inland Waters and Subterranean Fauna) No impacts to Innawally Pool.
4	Mine Pit Lakes (AMD)	The potential residual impacts relate to change to groundwater quality as a result of post-closure mine pit lakes. The EPA considers that, subject to the implementation of the recommended condition B6, requiring the revision and implementation the MCP, the environmental outcome is likely to be consistent with the EPA objective for inland waters.	Condition B6 (Rehabilitation and Closure) Requiring to update and submission of the Jimblebar Hub MCP (BHP 2023h) in accordance with the DEMIRS Statutory Guidelines for Mine Closure Plans March 2020 (updated in January 2023) (or any subsequent revisions of the guidelines).

2.4 Subterranean Fauna

2.4.1 Environmental objective

The EPA environmental objective for subterranean fauna is *to protect subterranean fauna so that biological diversity and ecological integrity are maintained* (EPA 2016d).

2.4.2 Investigations and surveys

The investigations and surveys used to inform the assessment of the potential impacts to subterranean fauna are provided in Appendix E.

DWER indicated that the investigations are mostly consistent with EPA Guidance for troglofauna and stygofauna. The survey effort for stygofauna appears to be inadequate due to large sections of the significant impact footprint having had very limited sampling.

Notwithstanding the above, the EPA has determined that it can proceed with the assessment of subterranean fauna in consideration of the collective information from the ERD (BHP) and RTS (BHP), particularly the information demonstrating the contiguous nature of the habitat, where sampling was limited.

2.4.3 Assessment context: existing environment

The development envelope is located within the central valleys of the Jimblebar Hub area of the Ophthalmia Range. Suitable habitat for subterranean fauna comprises the mineralised Brockman Iron Formation, Marra Mamba Formations, Wittenoom Dolomite and aquifers associated with deep valley-fill alluvium and colluvium (Biologic 2023a).

The Jimblebar mine area has been the subject of subterranean survey work and investigations previously carried out in 2008-2009 to support the original proposals. To support the significant amendment and building on the historical data from the vicinity of approved proposals, further survey work was undertaken across the development envelope between 2020 and 2022. When combined, the total sampling effort for the combined proposal consists of 192 stygofauna samples comprising 1,878 stygofauna specimens (resulting in at least 15 species being collected) and 498 troglofauna samples comprising 825 troglofaunal specimens (34 species) (Bennelongia 2023).

Stygofauna habitat and assemblage

Hydrogeological investigations have found several geological features (including the Central, Comedy and Monster Faults) occur within the Jimblebar area that act as barriers to groundwater flow and therefore restrict the movement of stygofauna species across the project area (BHP 2025a).

Prospective habitat for stygofauna in the Pilbara comprises deep valley-fill alluvium and calcrete aquifers, paleochannels and detrital/channel iron deposits, where species are normally found to a depth of 30 mbgl (Bennelongia 2023). Habitat modelling undertaken by the proponent within the development envelope found no substantial deposits of calcrete in the immediate vicinity of the development envelope. While there are some palaeovalleys on the margins of the development

envelope, highly prospective stygofauna habitat is largely absent from the Jimblebar mine area (Bennelongia 2023).

The depth to groundwater in the Jimblebar mine area is also considered too great to support a diverse stygofauna community (Bennelongia 2023), with current groundwater levels across the development envelope range from approximately 50 mbgl in the east to greater than 175 mbgl in the west. The stygofauna community in the Jimblebar mine area is considered of low diversity and richness that is reflective of the deep groundwater (Bennelongia 2023).

On-ground survey work of the DE conducted in 2020-2022 recorded a total of 171 stygofauna specimens attributable to at least 15 species (Bennelongia 2023). Within the combined drawdown area (representing the estimated maximum lateral extent of the combined drawdown), survey work recorded approximately 44 stygofauna taxa, including four records of stygofauna species known from a single record (i.e. singletons). The singletons were all found within a fractured rock aquifer where depth to the water table exceeded 50 m, including:

- Atopobathynella sp. 'BSY241'
- Phreodrilidae sp. 'BOL084'
- Schizopera sp. 'BHA285'
- Tubificidae sp. 'BOL074'.

Additional genetic studies on the potentially restricted species confirmed *Tubificidae* sp. 'BOL074' to be initially misidentified and was found to be the common species *Pristina longiseta* (BHP 2024b).

With the exception of these species, the stygofaunal community of the area is considered generally widespread, with all stygofauna taxa recorded being widespread species.

Ethel Gorge TEC

Located approximately 20 km west of the proposal, are the shallow alluvial and calcrete aquifers of Ethel Gorge that support the unique and diverse stygofauna assemblage *Ethel Gorge aquifer Stygobiont community Threatened Ecological Community* (Ethel Gorge TEC). The Ethel Gorge TEC is listed as a Critically Endangered TEC, under the BC Act, due to the diverse assemblage of stygofaunal species present (DBCA 2023).

Surveys and monitoring in the Ethel Gorge aquifer undertaken to date has recorded approximately 80 stygofauna species and/or adjacent local groundwater in the Newman area, most of which occur within the Ethel Gorge TEC. Of these species, 50 'core endemic species' are characterised by copepods and ostracods, with oligochaetes, amphipods and bathynellids also prominent (Bennelongia 2023), have been recognised from the Ethel Gorge area from monitoring programs conducted annually since 2009. While copepods and ostracods have been numerically abundant, amphipods and bathynellids have been the most diverse component of the assemblage (Stantec 2022a).

Troglofauna habitat and assemblage

Highly prospective troglofauna habitat within the development envelope is characterised by fractured and weathered geologies of the Brockman Iron Formation, the Joffre and Dales Gorge units, including the duricrust hardcap occurring atop and alongside these formations (Bennelongia 2023).

A recent on-ground survey recorded 197 troglofauna samples and the identification of 16 species (total of 34 species when combined with historical data), with seven species are currently known only from the Study Area. Findings from these studies have concluded that the troglofauna community of the Jimblebar mine area is of moderate diversity (Bennelongia 2023).

A detailed assessment of troglofauna habitat, supported by 2D and 3D habitat modelling, was undertaken focusing on the impact area of the significant amendment and adjacent approved Hashimoto pit. The focus area comprised the Brockman Iron Formation with a variety of extensive, contiguous lithologies that are likely to provide suitable habitat for troglofauna (Biologic 2023a).

Habitat modelling revealed the disturbance footprint of the proposed East Jimblebar pit to be characterised by complex folding and faulting occurring throughout the Brockman Formation, likely producing opened fractures and cavities, creating or enhancing interconnectivity of subterranean habitat through promotion of fractures in rock, especially within the weathered and hardcap zones (Biologic 2023a). One major fault is mapped occurring to the south-west of the proposed pit, immediately south of the Brockman Iron Formation, but not disrupting the east-west continuity within the Brockman Iron Formation itself. This degree of faulting would not be interpreted as a habitat barrier; rather, it may have increased fracturing within the rock and thus improved local connectivity of troglofauna habitat (Biologic 2023a).

Surveys recorded 10 troglofaunal species from within the proposed East Jimblebar deposit area (Bennelongia 2023), with three potentially restricted species found only in the impact area, including:

- *Scutigere* sp. 'BSYM113' – only known from the East Jimblebar pit,
- *Tyrannochthonius* sp. 'PSE057' – only known from the proposed East Jimblebar pit and the approved Hashimoto pit, and
- *Japygidae* sp. 'BDP192' – only known from the approved Hashimoto pit.

Of these potentially restricted species, *Scutigere* sp. 'BSYM113' was subjected to genetic sequencing programme finding the species distribution extending within the East Jimblebar and Caramulla areas with a known linear distance of 11 km, extending the known range of this species significantly.

2.4.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the proponent's response to submission document (BHP 2025b).

Public consultation on the proposal raised concerns about:

- loss of suitable stygofauna habitat and species assemblage from changes to groundwater regimes result of temporary groundwater drawdown at East Jimblebar mine pit.

- the loss of habitat for at least 10 species from mine pit excavation, with two troglofauna taxa having single records in the East Jimblebar pit direct impact sites.

The key issues raised and how they have been considered in the assessments are described in section 2.4.9.

2.4.5 Potential impacts from the proposal

The proposal has the potential to result in the following direct impacts on subterranean fauna from:

- the reduction in availability of suitable stygofauna habitat as a result of groundwater drawdown at East Jimblebar mine pit
- the loss of troglofaunal habitat from East Jimblebar mine pit excavation.

The impact from changes in quality of surplus water discharged from OB31 mine dewater into Ophthalmia Dam (that may infiltrate into the Ethel Gorge aquifer) as a result of in-pit TSF seepage from OB18/17 have been addressed in Inland Waters (Section 3.3). Therefore, changes to groundwater quality from the proposed in-pit TSFs will not be discussed further in this section.

The EPA considers indirect impacts from contamination of soil or groundwater on subterranean fauna habitat are likely to be negligible as a result of well-established management practices and regulations for the handling, storage and disposal of hazardous wastes in accordance with requirements of *the Dangerous Goods Safety Act 2004* and Part V of the EP Act.

2.4.6 Avoidance measures

The proponent has not proposed any avoidance measures to reduce the impacts to subterranean fauna associated with the significant amendment.

2.4.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed measures to minimise impacts to subterranean fauna through:

- continuing to manage potential impacts to the Ethel Gorge aquifer from surplus water discharge from Jimblebar Hub, in accordance with the management approach detailed in the EPWRMP.
- ongoing monitoring of the Ethel Gorge TEC that also includes sampling of the stygofauna assemblages, to confirm that the indicators (groundwater level and salinity) for maintaining the stygofauna habitat have not been exceeded.

The EPA notes that the proposal is not seeking any change to the discharge volume of surplus mine water to Ophthalmia Dam and therefore will not impact the dam's water levels or recharge capacity to the Ethel Gorge aquifer (and TEC). The proponent is required to continue to manage these potential impacts to the Ethel Gorge aquifer from surplus water discharge from Jimblebar Hub, in accordance with the management approach in the EPWRMP.

2.4.8 Rehabilitation measures

The proponent has committed to preparing and regularly updating a *Jimblebar Hub Mine Closure Plan* (Version 0, December 2023) (BHP 2023h) consistent with DMPE guidelines for preparing Mine Closure Plans.

2.4.9 Assessment of impacts to environmental values

The EPA considered that the key environmental values for subterranean fauna likely to be impacted by the proposal are the loss of subterranean fauna habitat and taxa.

Stygofauna

Mine Dewatering at East Jimblebar Pit

As previously discussed in section 2.3.9, the combined effect of the proposal's modelled groundwater drawdown extent is not predicted to reach the Ethel Gorge aquifer to the west due to natural barrier to groundwater flow (Figure 7). The EPA is therefore of the view that no impact or loss of stygofauna habitat in the Ethel Gorge TEC is expected as a result of additional groundwater abstraction from the Jimblebar mine area. Therefore, the EPA has focused its assessment on impacts to stygofauna within the proposed Jimblebar East mining area, which will be subject to proposed additional groundwater abstractions.

The stygofauna taxa recorded during the proponent's survey work for the approved proposals and significant amendment are considered widespread and not restricted to the impact area, with the exception of the three singletons recorded. These three species (*Atopobathynella* sp. 'BSY241', 'BOL084', *Phreodrilidae* sp. 'BOL084' and *Schizopera* sp. 'BHA285') were all collected within a fractured rock aquifer where depth to the water table exceeded 50 m (Bennelongia 2023).

The EPA understands from the proponent's studies that highly prospective habitat for stygofauna in the Pilbara comprising aquifers associated with deep valley-fill alluvium and colluvium, and weathered bedrock are largely absent from the Jimblebar mine area (Bennelongia 2023). The collection of a few species from the Jimblebar area where the groundwater is greater than 50 mbgl may possibly be due to the presence of a few large fractures that are hydrologically well connected to the surface, so that oxygen, carbon and nutrients are not limiting (Bennelongia 2023).

The EPA concludes that given the low diversity, the depth to groundwater and the potential for the stygofauna species recorded in the impact area being related to other species that are widespread, there is reasonable likelihood of suitable habitat remaining in the surrounding area to their locations or the species not being restricted to the impact area. The EPA considers that, subject to recommended condition A1-1 which limits total abstraction volume and impacts to stygofauna habitat beyond that which has been predicted, as well as continue to manage potential impacts in accordance with the EPWRMP, the environmental outcome is unlikely to be inconsistent with the EPA objective for subterranean fauna.

Cumulative Impacts

BHP's existing mining operations at the Jimblebar and Newman hubs (including from the Jimblebar Hub, OB32 BWT and Western Ridge) are the only projects that exist within the same groundwater and surface water catchments as the proposal. The

nearest third-party iron ore mining operation is Rio Tinto's Hope Downs 4 operation, located 105 km to the northwest of the Proposal in the central Pilbara region.

The proponent manages the Ethel Gorge aquifer (and TEC) at the regional scale through the EPWRMP due to the potential for cumulative impacts from multiple BHP mines. The proponent's surplus discharge modelling indicates that Ophthalmia Dam is likely to have sufficient capacity to receive the cumulative surplus discharge from approved operations, with a three-month controlled release from Ophthalmia Dam.

The EPA notes that it is highly unlikely that any third parties would impact Ethel Gorge TEC. Due to the recognised environmental values of the Ethel Gorge TEC, shallow aquifer and sensitivity to habitat change from changes in groundwater levels and groundwater quality, the proponent will continue to manage the potential cumulative impacts on the Ethel Gorge TEC from its Eastern Pilbara mines in the EPWRMP. The EPWRMP also includes a comprehensive stygofauna monitoring program, including of the stygofauna assemblage.

Troglofauna

Direct impact at East Jimblebar Deposit

Direct impacts to troglofauna include the removal of habitat as a result of mining of the proposed East Jimblebar pit, as well as the combined effect of additional localised loss from mining at the Jimblebar Hub.

The Eastern Jimblebar deposit supports a moderately diverse assemblage of troglofauna (Bennelongia 2023). The majority of restricted troglofauna were collected in bores that intersect geologies such as the Brockman Iron Formation and the Marra Mamba Formation. The detailed habitat assessment undertaken to support the proposal, identified suitable troglofauna habitat occurring extensively throughout the eastern Jimblebar area surrounding the proposed East Jimblebar pit, within most of the weathered members and subunits of the Brockman Iron Formation.

The EPA notes that the proposal will result in the potential impact on one troglofauna species (*Tyrannochthonius* sp. 'PSE057') that is currently only known from the proposed East Jimblebar pit and the approved Hashimoto pit associated with the proposal. This species was recorded from four sites within the approved Hashimoto pit and proposed East Jimblebar pit areas, over a linear range of approximately 3 km. The occurrences of this species were recorded across four different lithologies, including the detritals, and the Dales Gorge, Joffre, and Yandicoogina Shales Members of the Brockman Iron Formation, indicating that suitable habitat for this species likely occurs in an interconnected network throughout the development envelope and surrounding environment.

Noting the above, the EPA is of the view that although mining will impact the locations where the species was recorded to date, the habitat modelling and assessment provides confidence that suitable, well-connected habitats for this species will remain intact throughout the project area. It is therefore reasonable to expect that the species should occur in suitable habitats beyond the proposed and approved pits.

The EPA is therefore of the view that areas of suitable troglofaunal habitat will remain intact, particularly in the Joffre member to the north of the proposed East

Jimblebar pit, and in the Dales Gorge member to the south of the approved Hashimoto pit.

2.4.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the proposal on subterranean fauna environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can mitigate potential inconsistency with the EPA factor objective. The EPA assessment findings are presented in Table 7.

The EPA has also considered the principles of *the Environmental Protection Act 1986* (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 7: Summary of assessment for subterranean fauna.

Residual impact		Assessment finding	Recommended conditions and DMA regulation
1.	Direct loss of individuals or reduction in stygofauna habitat.	The proposal will result in the loss of subterranean fauna habitat as a result of proposal implementation. The EPA considered that the proposal is unlikely to have significant impacts on subterranean fauna from the reduction in habitat through mining and groundwater drawdown. The EPA considers that, subject to recommended condition A1-1 which limits total abstraction volume and impacts to stygofauna habitat beyond that which has been predicted, as well as continue to manage potential impacts in accordance with the EPWRMP, the environmental outcome is likely to be consistent with the EPA's objectives.	Condition A1 (Limitations and extent of proposal) Limits on groundwater abstraction. Condition B3 (Inland Waters and Subterranean Fauna) Maintaining habitat, groundwater levels and salinity in the Ethel Gorge aquifer to support the stygofauna habitat of the Ethel Gorge TEC. DMA legislation DWER can regulate groundwater abstraction under the RiWI Act.
2.	Indirect loss of subterranean fauna habitat and individuals.	Degradation of habitat from changes in surface hydrology, changes to structure and presence of underground voids, fragmentation of habitat, groundwater mounding and contamination of water and soil are unlikely to have a significant residual impact to subterranean fauna. The EPA advises that subject to DMA regulation the environmental outcome is likely to be consistent	DMA Legislation The DWER can regulate groundwater abstraction under the RiWI Act. The DWER can regulate emissions and discharges under Part V of the EP Act. Handling, storage and disposal of hazardous wastes under Dangerous Goods Safety Act 2004.

Residual impact		Assessment finding	Recommended conditions and DMA regulation
		with the EPA factor objective for subterranean fauna.	

2.5 Greenhouse Gas Emissions

2.5.1 Environmental objective

The EPA environmental objective for greenhouse gas (GHG) emissions is *to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable* (EPA 2024).

2.5.2 Policy context

The information used to inform the assessment of the proposal's greenhouse gas emissions are provided in Appendix E.

The EPA recognises that the proponent has prepared this information in accordance with the 2023 version of the Environmental Factor Guideline – Greenhouse Gas Emissions (GHG EFG) (EPA 2023b). The EPA considers it has adequate information to have due regard to its updated GHG EFG (EPA 2024) in its assessment of the proposal's greenhouse gas emissions.

2.5.3 Assessment context

GHG emissions from a cumulative range of sources have an impact on WA's environment, even if the specific impact of a particular proposal's emissions may not be known with certainty. This is because there is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will have an impact on WA's environment and environmental values. For example, climate change has already caused a significant drying of the State's south-west, which in turn places significant additional pressures on water resources, flora and fauna, marine environmental quality and social surroundings.

There is also an established correlation between global temperature rise and GHG emissions. The EPA advises that for every 1,000 billion tonnes (t) of CO₂-e emitted by human activity, global surface temperature rises by 0.45°C, as a best estimate, with a likely range from 0.27°C to 0.63°C (IPCC 2023). The best estimates of the remaining global carbon budgets from the beginning of 2020 are 500 Gt CO₂ for a 50% likelihood of limiting global warming to 1.5°C (IPCC 2023). Remaining carbon budgets from 2020 depend on emissions and emissions mitigation from that time (IPCC 2023).

The EFG GHG (EPA 2024) provides that GHG emissions from a proposal will be considered where they are reasonably likely to exceed 100,000 tonnes (t) of carbon dioxide equivalents (CO₂-e) of scope 1 or scope 2 emissions in any year. This is the same as the (scope 1) threshold criteria for designation of a large facility under the Australian Government's Commonwealth Safeguard Mechanism. The scope 1 emissions provided by the proponent for this proposal exceed this threshold. Scope 3 emissions for the proposal are also expected to exceed 100,000 t CO₂-e per annum.

2.5.4 Potential emissions from the proposal

Scope 1 GHG emissions resulting from the proposal include those from heavy haulage, ancillary and dewatering, electricity generation, transportation via rail to port, and land clearing.

There are no scope 2 emissions as GHG emissions from electricity generation are considered scope 1 emissions for this assessment.

Scope 3 emissions include downstream emissions associated with ship loading activities at Port Hedland, shipping of products to customers and customer's processing of iron ore in steelmaking.

The proponent provided estimates of (unmitigated) annual average and peak GHG emissions for both the significant amendment and the combined proposal.

GHG emissions – Significant Amendment:

- Scope 1 emissions: annual average of 75,484 t CO₂-e with a maximum (peak) of 277,075 t CO₂-e.
- Scope 3 emissions: annual average of 13,883,481 t CO₂-e with a maximum (peak) of 63,600,877 t CO₂-e.

The emissions above, provided by the proponent, did not include emissions associated with landfill waste, wastewater effluent, hydrofluorocarbons and perfluorocarbons, and scope 3 emissions associated with the supply of fuel to power stations (BHP 2023g).

GHG emissions – Combined Proposal

The proponent estimated GHG emissions associated with the Jimblebar Hub (combined proposal) to be:

- Scope 1 emissions: annual average of 352,748 t CO₂-e with a maximum (peak) of 394,241 t CO₂-e.
- Scope 3 emissions: on average of 56,770,254 t CO₂-e with a maximum (peak) of 109,703,663 t CO₂-e.

The ministerial statements associated with the approved proposals did not include any conditions relating to greenhouse gas emissions.

Cumulative effects

WA's yearly scope 1 emissions based on 2022 levels were 82.5 million tonnes (Mt) CO₂-e (DCCEEW 2024b) and national emissions for 2022 were 432.9 Mt CO₂-e (DCCEEW 2023). The annual average estimated scope 1 GHG emissions from the combined proposal would constitute approximately 0.43% of WA's total emissions and 0.08% of Australia's total reported GHG emissions.

The proponent's Regional Greenhouse Gas Management Plan (BHP 2023g) and Jimblebar Greenhouse Gas Emissions (Land Clearing) Memorandum (ETA 2023) describe the various methodologies that were used to calculate quantities of GHG emissions resulting from the significant amendment and the combine proposal.

The EPA considers that the proponent's estimated GHG emissions quantities are a reasonable basis for the assessment.

2.5.5 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the proponent's RTS documents (BHP 2025b).

Comments related to the content of the Regional Greenhouse Gas Management Plan (GHGMP) submitted with the significant amendment.

2.5.6 Avoidance and minimisation measures including best practice review and benchmarking

Avoidance and minimisation

The proponent has identified the following measures to minimise GHG emissions in its Regional GHGMP:

- the construction and operation of the conveyor to reduce the heavy haulage by trucks to transport ore. This is anticipated to reduce GHG emission by 3.4% (359,142 t CO₂-e) over the life of the combined proposal.
- as part of the fleet carbonisation strategy, the proponent is moving towards the electrification of its haul trucks, with prototypes having been developed. Trials are expected to begin in 2024, with the goal of having electric haul trucks operational on some BHP sites by 2027
- development of electric excavators and replacing diesel light vehicles with electric vehicles
- the proponent is working with locomotive manufacturers to develop battery electric locomotives, with trials expected to commence in 2024 and implementation by the late 2020s. This initiative is expected to reduce GHG emissions by up to 20%.
- increasing the sources of renewable energy providing power mining operations, through proven technology such as windfarms and solar farm,

Best practice review

To gain a better understanding of whether the proposal's GHGMP is consistent with best practice measures, the proponent engaged KPMG to undertake the review (*Review of Jimblebar Hub Greenhouse Gas Management Plan* (dated 30 November 2023) which is now Schedule 1 of the Regional GHGMP. This review included an assessment of the proposed emissions reduction measures against industry best practice.

The review acknowledged that the proposal is part of the proponent's integrated iron ore operation in the Pilbara and that decarbonisation initiatives in the proposal are part of wider decarbonisation strategy. The outcome of the review concluded that the following initiatives were consistent with best practice emissions reductions:

- Electrification of mining vehicles and other equipment, which offers the best prospect for significant decarbonisation. The proponent is working with vehicle manufacturers to trial and introduced battery electric haul trucks.

- Provision of power from the Yarnima power station. The combined cycle gas-fired electricity generation plant, which uses what is considered best-practice technology in terms of fossil fuel electricity generation.
- Inclusion of an overland conveyor which will reduce the use of diesel and support wider decarbonisation initiatives.

Benchmarking

The proponent has benchmarked the combined proposal against other similar sized iron ore operations demonstrating a lower emissions intensity than those operations. While the combined proposals emissions intensity of 0.00463 t CO₂-e per tonne iron ore is slightly below the Safeguard Mechanism Iron Ore mining default of 0.00476 t CO₂-e per tonne iron ore, it is higher than the associated Safeguard Mechanism best practice benchmark (0.00188 t CO₂-e/t iron ore). The EPA notes this is likely due to the proponent's intention to explore future decarbonisation activities at a regional level, as discussed in the proposal's Regional GHGMP. As a result, the emissions reflected in this combined proposal do not currently take into account future regional reductions which are likely to improve overall efficiencies of Jimblebar operations.

The EPA considers that the proponent has adopted upfront avoidance and minimisation measures, through the inclusion of the conveyor, to reduce GHG emissions from the commencement of the significant amendment. Based on the proponent's benchmarking and the findings of the KPMG (2023) review, the environmental outcome is likely to be consistent with the EPA's environmental factor objective to reduce greenhouse gas emissions as far as practicable.

2.5.7 Emissions Trajectory to 2050

The proponent's long-term goal for both scope 1 and scope 2 emissions from its operated assets is to achieve net zero operational emissions by 2025. Its medium-term target is to reduce operational GHG emissions by at least 30% from financial year 2020 levels by financial year 2030.

The proponent has adopted an indicative scope 1 emissions reduction trajectory for the combined proposal aligned with the Safeguard Mechanism (Figure 10)

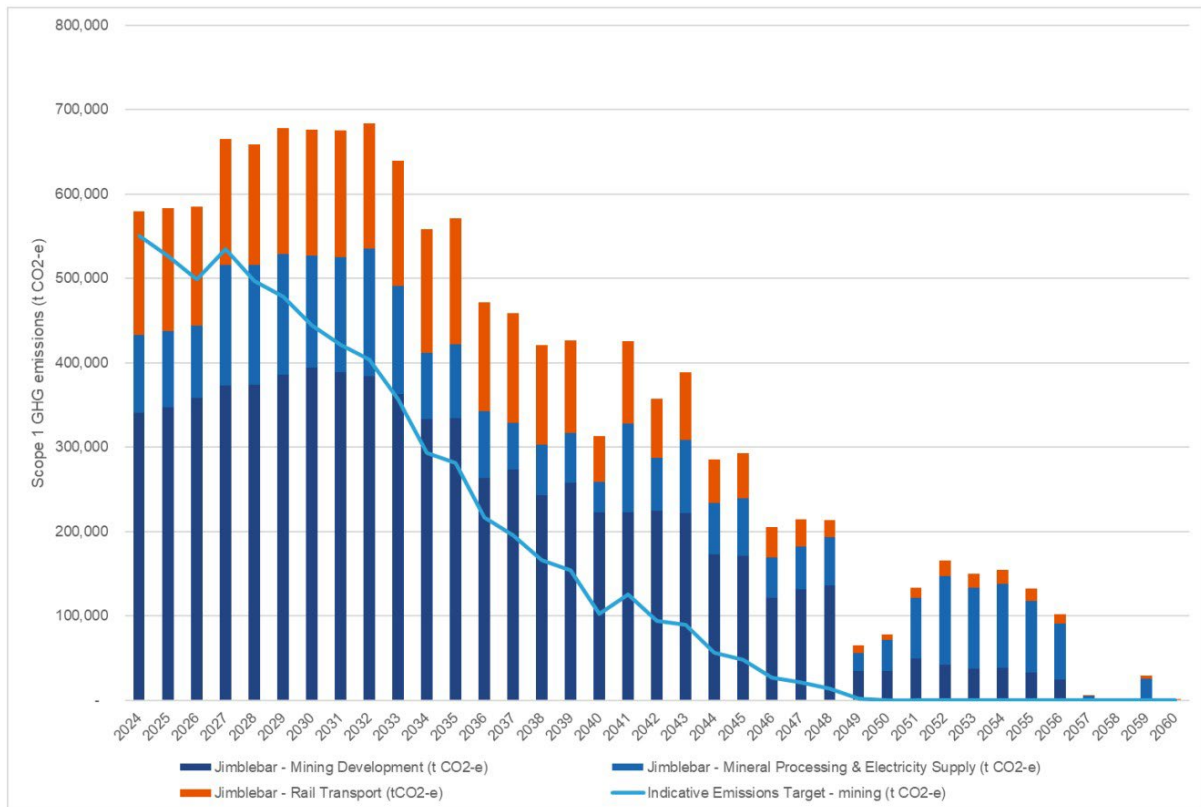


Figure 10: Scope 1 emissions indicative reduction trajectory

The EPA notes that the proponent's indicative emissions trajectory for scope 1 emissions will mitigate approximately 6,446,925 t CO₂-e over the life of the combined proposal, compared to the (unmitigated) 'base case scenario'.

2.5.8 Scope 3 GHG emissions

Scope 3 emissions relating to this proposal predominantly (>80%) relate to the processing of mined iron ore into steel products and are estimated to be 56,770,254 t CO₂-e (annual average) and 2,080,765,845 t CO₂-e over the life of the combined proposal.

The EPA notes the proponent's long-term, albeit uncertain, goal of net zero scope 3 emissions by 2050 and current measures being undertaken by the proponent with downstream customers and suppliers to reduce scope 3 emissions.

The EPA further notes that some downstream emissions are operational emission of other BHP Iron Ore controlled facilities, such as Port Hedland. The EPA understands reductions in emissions from those operations will be managed through operational decarbonisation strategies described in the Regional GHGMP which includes the long-term goal and medium-term targets for operational (scope 1 and scope2) GHG emissions.

The EPA encourages the proponent to take all measures it can reasonably take to reduce scope 3 emissions.

2.5.9 Offsets

The proponent prioritises GHG emissions reductions at its operated assets to achieve its scope 1 and 2 targets and goals, however acknowledges there is a role

for offsets i.e. Australian Carbon Credits Units and Safeguard Mechanism Credits (SMC). Therefore, where structural abatement of emissions is insufficient to meet the combined proposal emissions reduction trajectory, the proponent will ensure targets are met by using SMC by either using banked SMCs from prior years, transferring SMCs from other BHP facilities and/or retiring eligible, high quality offsets in a temporary or transitional capacity while abatement options are being studied, as well as for 'hard to abate' emissions with limited or no current technological solutions, and where access to renewable energy is constrained.

This approach is consistent with the principle that offsets should be a last resort, applied only after all reasonable avoidance and minimisation measures have been implemented.

The EPA considers it likely that the proponent will need to utilise carbon offsets to meet the emissions reduction trajectory. However, the EPA also acknowledges that the proponent's future decarbonation strategies will contribute to reducing operational GHG emissions from the combined proposal.

The EPA considers that the proponent has undertaken due diligence investigations and its strategy of building a portfolio of offsets, using a variety of short and long-term sourcing approaches, are likely to ensure sufficient offsets are available that satisfy integrity principles.

2.5.10 Other decision-making processes – Commonwealth Safeguard Mechanism

The proponent has identified that the combined proposal will be a designated large facility under the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act). Proposals regulated under the Safeguard Mechanism are required to take actions to reduce emissions to achieve Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050.

As the combined proposal is an existing facility it will be subject to site specific emissions intensity (0.00463 t CO₂-e/t iron ore), with a gradual transition to industry benchmark emissions intensity values during the period through to 2030 which is currently set at 0.00188 t CO₂-e per tonne iron ore.

The Safeguard Mechanism will require the proponent to apply a 4.9% annual decline rate for financial years commencing 1 July 2023 to 1 July 2029. From 1 July 2030, the annual decline rate has been notionally set at 3.285%, which represents a linear trajectory to net zero by 2050.

Scope 1 emissions not covered under the Safeguard Mechanism are primarily associated with vegetation clearing and are estimated to be 197 t CO₂-e per annum (maximum (peak) of 367 t CO₂-e) and 7,299 t CO₂-e over the life of the combined proposal.

The EPA notes that the proponent has adopted a Scope 1 emissions reduction trajectory that aligns with the Safeguard Mechanism.

The EPA understands that annual residual emissions scope 1 emissions not covered by Safeguard Mechanism are well below 100,000 t CO₂-e per annum including the total emissions over the life of the combined proposal which are estimated to be 7,299 t CO₂-e.

The EPA is of the view that emissions reductions required under the Safeguard Mechanism represents as far as practicable for the reduction of GHG emissions from the combined proposal. The EPA has recommended a condition that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism (recommended condition B4).

2.5.11 Summary of key factor assessment and recommended regulation

The EPA considers that the emissions avoidance, minimisation and offsets proposed by the proponent are generally consistent with the EPA's factor objective to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable.

The EPA notes that as a result of the proponent's scope 1 GHG emission reductions measures and operation of the combined proposal to achieve the proposed emission reduction targets, there is expected to be mitigation of approximately 6.4 Mt CO₂-e of scope 1 GHG emissions over the life of the proposal compared to baseline emissions.

The EPA recognises that the significantly strengthened Commonwealth Safeguard Mechanism requires the proponent to take actions to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. The EPA is of the view that emissions reductions required under the Safeguard Mechanism represents as far as practicable for the reduction of GHG emissions from the combined proposal. The EPA has recommended a condition that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism (recommended condition B4).

Scope 3 emissions form a large proportion (>80%) of the total GHG emissions over the life of the combined proposal and are estimated to be, on average, 56,770,254 t CO₂-e per annum. The EPA notes that the proponent has taken measures to reduce scope 3 emissions and encourages the proponent to take further reasonable opportunities to reduce emissions as they arise through the life of the combined proposal to further reduce scope 3 emissions.

Table 8: Summary of assessment for greenhouse gas emissions.

Residual impact or risk to environmental value		Assessment finding or Environmental outcome (choose which one to use)	Recommended conditions and DMA regulation
1.	Scope 1 emissions are expected on average to be 352,748 t CO₂-e per annum (up to a maximum of 394,241 t CO₂-e per annum) and reduce to net zero by 2050. There are no scope 2 emissions associated with this proposal.	The proponent has adopted avoidance and mitigation measures to reduce GHG emissions at commencement of the significant amendment. Benchmarking against other iron ore mining operations indicates the emissions intensity is better than other existing comparable facilities. Scope 1 emissions from the significant amendment and combined	Condition B4: (Greenhouse Gas Emissions) Reporting if obligations change under the National Greenhouse and Energy Reporting Act 2007 (NGER Act) and Safeguard Mechanism (SGM).

	Scope 3 GHG emissions are estimated to be up to 56,770,254 t CO₂-e per annum.	proposal, except those associated with vegetation clearing, are covered by the Safeguard Mechanism. The EPA recognises that the Commonwealth Safeguard Mechanism requires the proponent to take actions to reduce GHG emissions, including imposing annual baseline decline rates to ensure Australian emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050 are achieved. GHG emissions associated with vegetation clearing area well below 100,000 t CO₂-e per annum (annual maximum (peak) 367 t CO₂-e). The EPA notes that offsets are likely to meet the emissions reduction trajectory and considers that the proponent has undertaken due diligence and proposed a range of short and long-term offset approaches. The EPA considers that the proponent has implemented measures to reduce scope 3 emissions, however considers that further opportunities are expected to arise. The EPA encourages the proponent to take all reasonable measures to reduce scope 3 emissions. The EPA is of the view that emissions reductions required under the Safeguard Mechanism represent an as far as practicable reduction of the proposal's scope 1 GHG emissions, and therefore the likely environmental effects of the proposal can be mitigated to achieve consistency with the environmental factor objective for GHG emissions. The EPA has recommended a condition that requires the proponent to notify the State of a substantial change to its obligations under the Safeguard Mechanism.	DMA regulation Scope 1 emissions covered under the Safeguard Mechanism.
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2.6 Social Surroundings

2.6.1 Environmental objective

The EPA environmental objective for social surroundings is *to protect social surroundings from significant harm* (EPA 2023a).

The proponent's assessment of potential impacts to Aboriginal cultural heritage considered the application of the Aboriginal Heritage Act 1972 (AH Act).

2.6.2 Investigations and surveys

The proponent has an ongoing relationship with the Nyiyaparli Traditional Owners which is formalised through a Comprehensive Agreement and associated registered Indigenous Land Use Agreement (ILUA). BHP and Nyiyaparli representatives have been jointly conducting heritage surveys and consultations within the proposed development envelope since the late 1980s. Work has included baseline surveys to identify and avoid heritage values; and detailed investigations and consultations to understand significance, define management strategies, and support approvals processes (BHP 2025a).

Noting the ILUA to undertake ongoing consultation and high level of engagement between the Nyiyaparli representatives and the proponent, the EPA considers that it has sufficient information to assess impacts on social surroundings.

2.6.3 Assessment context: existing environment

The proposed elements and activities are within or adjacent to the existing mining operations at Jimblebar Hub which includes the Jimblebar, Orebody 31 and Orebody 18 Iron Ore Projects. The town of Newman is approximately 40 km to the east and the closest third party mine is located 105 km to the northwest (Rio Tinto's Hope Downs 4).

The Sylvania Pastoral Station extends through much of the southern half of the development envelope. The nearest National Park or conservation reserve is the Collier Range National Park, which is approximately 123 km southwest of the proposal.

Aboriginal cultural heritage

The proposal is wholly within the Nyiyaparli Native Title determination area (WCD2018/008), which is represented by the Nyiyaparli People (Figure 11). The proponents ongoing relationship with the Nyiyaparli Traditional Owners is formalised through a ILUA (BHP 2025a).

Surveys to date have identified heritage places throughout and in proximity to the proposed development envelope. A number of these sites occur within the development envelope of the approved proposal.

Significant sites noted as culturally significant within and in the vicinity of the development envelope include:

- Innawally Pool (a semi-permanent water feature) located within the main channel of Jimblebar Creek within the proposed development envelope (current Jimblebar MS1126 development envelope)
- Jinerabar Pool, an intermittent pool, located on Jimblebar Creek (on Ethel Creek Station) approximately 41 km downstream of the northern boundary of the current Jimblebar MS1126 development envelope. The pool is located 1.5 km upstream of the confluence between Jimblebar and Caramulla creeks

The Fortescue River is of high cultural and heritage importance to the Nyiyaparli Traditional Owners. The Jimblebar Creek and Caramulla Creeks located in the development envelope are major ephemeral tributaries for the Fortescue River (BHP 2025a).

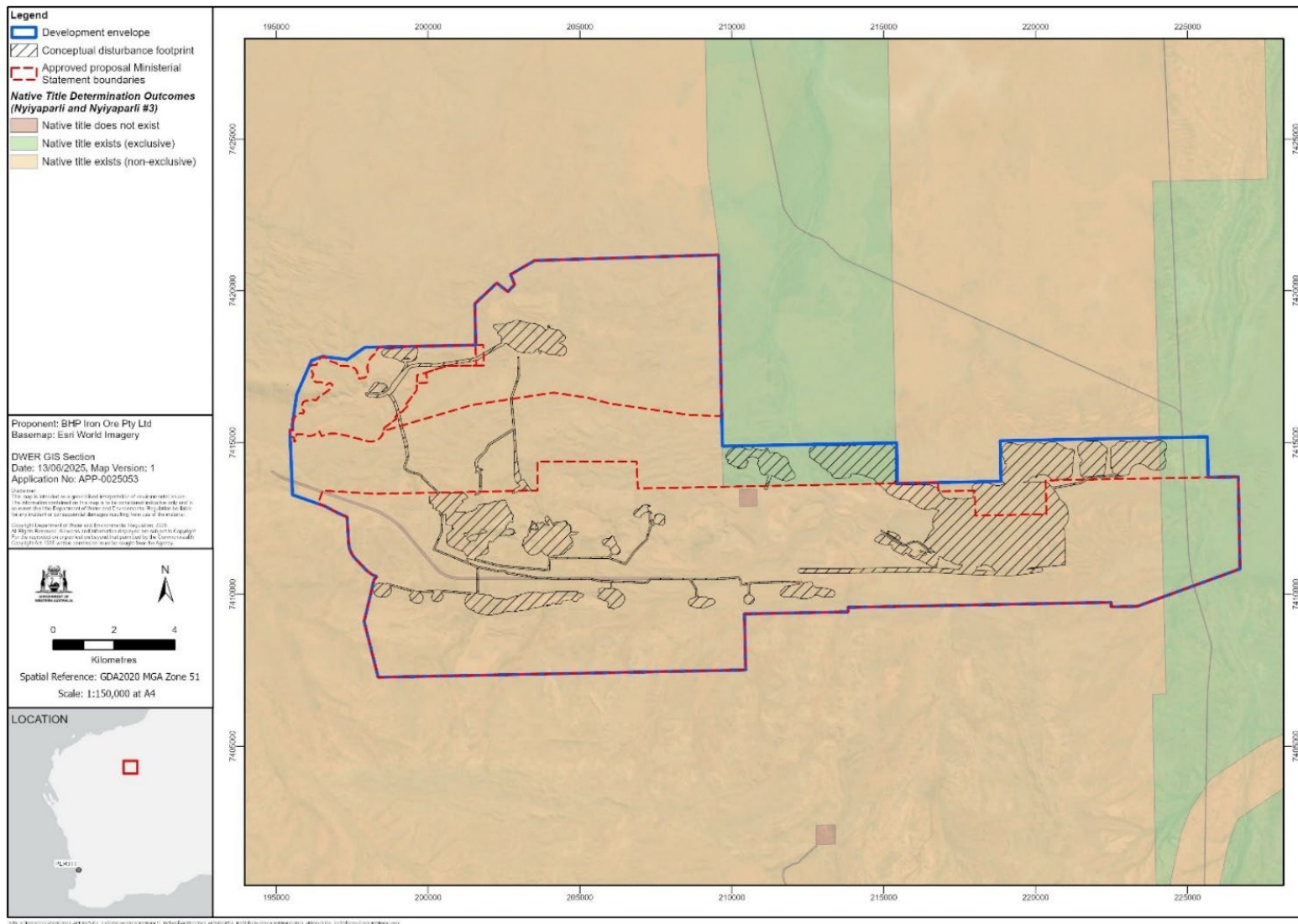


Figure 11: Native Title Determination Areas

2.6.4 Consultation

Matters raised during stakeholder consultation and the proponent's responses are provided in the proponent's Response to Submissions (BHP 2025b). There were no major issues raised in public consultation.

2.6.5 Potential impacts from the proposal

The proponent has identified that the proposal has the potential to impact on social surroundings through:

- disturbance of cultural heritage sites and values (including removal of ethnobotanically significant flora and habitat supporting native fauna of cultural significance)
- impacts to access, landscape, and amenity (including impacts from dust and water)
- degradation of social, cultural and heritage values.

2.6.6 Avoidance measures

The proponent has proposed the following avoidance measures:

- no heritage sites are located within the conceptual footprint of the significant amendment
- no heritage sites are located within 100 m of the East Jimblebar pit
- a 30 m buffer is maintained between infrastructure and heritage sites apart from two sites located near the conveyor corridor.

2.6.7 Minimisation measures (including regulation by other DMAs)

The proponent outlined the following minimisation measures to reduce both direct and indirect impacts to social surroundings:

- manage access to sites within the proposed development envelope
- where possible, involve Nyiyaparli representatives, through Karlka Nyiyaparli Aboriginal Corporation (KNAC) in environmental surveys, monitoring and rehabilitation activities
- design and install appropriate dust controls on infrastructure in accordance with BHP internal standards, including managing dust emissions from non-fixed infrastructure
- implementation of management plans to manage the integrity and health of riparian vegetation along Jimblebar Creek and Caramulla Creek; limit the extent of surplus water discharges (including ensuring that Innawally Pool is not impacted); and ensure the proposal is rehabilitated in an ecologically sustainable manner

- ensure ongoing engagement with Nyiyaparli representatives through KNAC in relation to social, cultural and heritage values throughout the life of the proposal.

Aboriginal Heritage Act 1972

Approval under the *Aboriginal Heritage Act 1972* is required prior to impact to registered heritage sites.

The Jimblebar and Orebody 31 Cultural Heritage Management Plans (CHMPs) provide a framework for how the proponent and KNAC will work in partnership to support the conduct of these proposals and appropriately manage the impact of those activities on Aboriginal cultural heritage. A CHMP has not been developed for the OB18 approved proposal as no impacts to heritage places are proposed by the 5-Year Mine Plan (BHP 2025a).

The EPA notes that the AH Act does not apply to sites outside the development envelope, or to indirect impacts within the development envelope.

2.6.8 Rehabilitation

The proponent will implement the MCP (BHP 2023h) to meet the following objectives:

- ensure that the proposal is decommissioned and rehabilitated to be safe, stable, and non-polluting and in an ecological sustainable manner
- undertake progressive rehabilitation, where practicable with a priority focus on progressive backfilling into mine out pits which is expected to minimise the extent of post-closure pit lakes. The long-term beneficiation strategy will also contribute to backfill through the in-pit storage of tailings.

The proponent will work with Nyiyaparli Traditional Owners in relation to ethnobotanical values and this may include the use of ethnobotanical species in rehabilitation seed mixes and/or the propagation of ethnobotanical species for planting in rehabilitation areas.

Nyiyaparli representatives through KNAC have expressed a clear preference for the avoidance of pit lakes at closure. Based on the current mine plan, pit lakes would be expected to form in several pits at Jimblebar, including the proposed East Jimblebar pit. The proponents progressive closure philosophy for the Jimblebar Hub includes a priority focus on progressive backfilling into mined-out pits. Based on backfill scenario analysis conducted in 2019, between 40-60% of mined overburden may be backfilled into mine out pits at Jimblebar. This is expected to minimise the extent of post-closure pit lakes. The long-term beneficiation strategy will also contribute to backfill through the in-pit storage of tailings (BHP 2025a).

2.6.9 Assessment of impacts to environmental values

The EPA considered that the key social surroundings values likely to be impacted by the proposal are Aboriginal cultural heritage.

The social surroundings factor was not identified as a key environmental factor for the Jimblebar Optimisation Project, approved under MS1126 and as such, social surroundings engagement with Traditional Owners was not undertaken. Orebody 31 and Orebody 18 were assessed and approved prior to introduction of the Social

Surroundings Environmental Factor Guideline in 2016. BHP has provided information on disturbance to heritage sites in relation to the approved proposals.

Previous surveys have recorded archaeological sites (e.g. artefact scatters, scarred trees, rock shelters and quarries) and ethnographic sites within the development envelope. Previous disturbance has been approved under the *Aboriginal Heritage Act, 1972*.

It is noted that impacts to Aboriginal cultural heritage values may occur through impacts to inland waters, and ethnobotanical impacts such as impacts to flora and vegetation, and terrestrial fauna (see sections 2.1, 2.2 and 2.3 of this report).

Direct Impacts to Aboriginal heritage sites

The proponent states that further ethnographic surveys are required for the conceptual footprint and has indicated it will manage Aboriginal Cultural Heritage in accordance with existing heritage approvals and agreements (including the OB31 and Jimblebar CHMPs) (BHP 2025a). The CHMPs are due to be reviewed and updated at least every two years to capture any changes or additional required management measures as the mine plan progresses.

The EPA notes that the proponent would require consent from the Minister for Aboriginal Affairs to alter Aboriginal sites under the AH Act. The proponent has advised that consent would be sought under the relevant legislation for the disturbance of any sites that cannot be avoided.

The EPA is satisfied that the processes provided for under the AH Act can mitigate potential direct impacts to Aboriginal sites within the development envelope to meet the EPA's objectives because:

- the Aboriginal Cultural Heritage Committee must evaluate the importance and significance of the sites and make a recommendation to the Minister for Aboriginal Affairs before the alteration occurs
- the Minister for Aboriginal Affairs' consent is required before the alteration occurs
- new information about Aboriginal sites which are found after a consent has been granted must be notified to the Minister for Aboriginal Affairs
- the consultation policy for the AH Act expects that all relevant Traditional Owners are consulted before consent is considered
- provisions relating to the protection of Aboriginal sites apply even if sites or relevant heritage features are not registered or lodged with DPLH
- the AH Act makes it an obligation to report Aboriginal cultural sites or objects to DPLH
- consent can include conditions for the protection, or mitigation or management of sites in the consent area
- relevant Traditional Owners can apply to the State Administrative Tribunal for a review of the Minister's decision.

The EPA recognises that the AH Act does not apply to sites outside the development envelope, or to indirect impacts to Aboriginal cultural heritage. The EPA is of the view that the proponent has taken reasonable steps to consult with the Nyiyaparli

Traditional Owners about these impacts, and the EPA has used this information to inform its assessment.

The EPA considers its factor objective is likely to be met in respect of direct impacts to Aboriginal cultural heritage values subject to operation of the AH Act and implementation of recommended conditions B5-1 and B5-2, which require:

- no disturbance to any Aboriginal cultural heritage sites unless consent is granted, or authority is given to disturb that site under the *Aboriginal Heritage Act 1972* and has involved reasonable steps to consult with the relevant Traditional Owners
- subject to reasonable health and safety requirements, no interruption of ongoing access to land utilised for traditional use or custom by the relevant Traditional Owners
- avoid, where practicable, and otherwise minimise adverse impacts to Aboriginal cultural heritage within and surrounding the development envelope.

Loss or restriction of access to land for cultural purposes

The EPA has considered the potential impact of the proposal on restricting access to the land by the Nyiyaparli Traditional Owners for cultural purposes. The proponent has advised while access to the proposed development envelope will be restricted for safety reasons during construction and operation of the mine, the proponent will continue to enable access to the site for Nyiyaparli Traditional Owners as per the BHP and Nyiyaparli Comprehensive Agreement Land Access Protocol Entry.

Visual and landscape impacts to Aboriginal cultural heritage

The EPA considers that the implementation of the proposal will alter the landscape which will impact on the visual amenity of the environment.

The Nyiyaparli Traditional Owners through KNAC have expressed that the post-mining landscape is without pit lakes, backfilling is to be to ground level, especially if pit voids are highly visible and that waste rock landform designs look as natural as possible (BHP 2023h). The EPA notes that the proponent proposes partial backfilling of the new pit and the formation of a pit lake. The proponent also advises that pit lakes would be expected to form in several pits at Jimblebar (BHP 2025a).

The EPA considers it appropriate to recommend condition B5-4 requiring the proponent provide the Nyiyaparli Traditional Owners with the opportunity to be consulted on the rehabilitation and final design of the constructed landforms.

Dust

There is potential for construction and operation of the mine to generate dust. While the proponent does not consider that this will have a significant impact on the health native vegetation, it acknowledges that dust may degrade the condition of plants that have significance to and are used by the Traditional Owners. Dust may also indirectly impact on heritage sites within and outside of the development envelope. The proponent has committed to maintaining a minimum 100 m separation distance between the East Jimblebar pit and heritage sites and maintaining a minimum 30 m separation distance between other infrastructure and heritage sites where practicable (BHP 2025a).

The proponent has committed to co-developing a CHMP with Nyiyaparli representatives through KNAC, to ensure ongoing engagement throughout the life of operation in relation to social, cultural and heritage values and is committed to working with the Nyiyaparli Traditional Owners to incorporate ethnobotanical species in rehabilitation programs (BHP 2025a).

Subject to recommended condition B5-1(2), which requires no interruption of access, in conjunction with mitigation measures proposed in the ERD, the EPA considers that the proposal is likely to be consistent with the EPA objective for this factor.

Cumulative impacts

The EPA has considered the potential cumulative impacts to Aboriginal cultural heritage values in the context of the Whaleback and Orebody 29/30/35 mines and Rio Tinto's Hope Downs 4. The cumulative impact of the proposal is not expected to be significant, and this is expected to be consistent for any cumulative impacts on culturally important flora and water values.

The EPA is of the view that with the proponent's cultural heritage governance and potential impact framework, the proponent's commitments to ongoing consultation with the Nyiyaparli People, and avoidance of Aboriginal heritage sites in the proposal, cumulative impacts from the proposal are unlikely to significantly impact social surroundings on Aboriginal cultural heritage at a cumulative scale. Subject to implementation of recommended conditions (B5), the EPA considers the environmental outcome is likely to be consistent with the EPA objective for this factor.

Rehabilitation and closure

The EPA advises that environmental outcomes should be considered during the closure process. The EPA notes that for long-lived mines, there is a specific need to ensure they are closure ready well in advance of decommissioning through appropriate research, field trials and progressive rehabilitation. The EPA considers that during operation and closure of the proposal, measures to improve environmental outcomes for mine closure are required.

The EPA considers the regulatory framework under the Mining Act for mine closure is appropriate for some aspects, such as landform stability. However, there is a need to have specific environment outcomes to ensure rehabilitation and closure is conducted in a manner that minimises impacts to social surroundings. The EPA has therefore recommended condition B5 to ensure the Nyiyaparli People are consulted on the achievement of rehabilitation and closure outcomes specified in recommended condition B6 and B7.

2.6.10 Summary of key factor assessment and recommended regulation

Table 9: Summary of assessment for social surroundings.

Residual impact		Assessment finding	Recommended conditions and DMA regulation
1.	Direct impacts to Aboriginal cultural heritage values.	The EPA advises there is a risk of residual impacts to Aboriginal cultural heritage values associated with disturbance to heritage sites or features. The EPA advises that this residual	Condition A1 (Limitations and extent of proposal) Condition B3 (inland waters)

Residual impact		Assessment finding	Recommended conditions and DMA regulation
		impact should be subject to recommended condition B5-1 to ensure impacts to Aboriginal heritage sites are avoided unless consent is granted through another decision-making process in consultation with the Traditional Owners. The EPA considers that subject to regulation by other decision-making processes and the recommended conditions, the environmental outcome is likely to be consistent with the EPA objective for social surroundings.	Limit extent of surface water flow along Caramulla and Jimblebar Creeks. No adverse impacts to riparian tree species along the creeks. Condition B5 (Social surroundings) Avoid disturbance of Aboriginal cultural heritage values unless consent is granted or authority is given to disturb that site under the AH Act and has involved reasonable steps to consult with the relevant Traditional Owners.
2.	Loss of Aboriginal cultural heritage.	The EPA advises that there is a residual impact to Aboriginal cultural heritage through the loss of plants and animals of cultural significance and restriction of access to use of land and flora and vegetation for traditional activities within the development envelope. The EPA advises that this residual impact should be subject to conditions (recommended condition B5-1) to ensure access to the land and flora and vegetation used for cultural purposes subject to reasonable health and safety requirements. The EPA concludes that implementation of the recommended condition would ensure consistency with the EPA objective for social surroundings.	Condition B5 (Aboriginal cultural heritage) No interruption of ongoing access to land utilised for traditional use or custom by the relevant Traditional Owners.
3.	Visual and landscape impacts to Aboriginal cultural heritage	The proposal would result in permanent changes to the landforms and general landscape. Waste rock landforms, pit voids and pit lakes would remain as permanent changes to the landscape. The EPA recommends condition B5-4 to ensure that final landforms are designed in consultation with the	Conditions A1 (Limitations and extent of proposal) Condition B5 (Social surroundings) Reasonable consultation with Traditional Owners on waste rock landforms, pit voids and pit lakes to

Residual impact		Assessment finding	Recommended conditions and DMA regulation
		relevant Traditional Owners to minimise impacts to cultural values. The EPA concludes that implementation of the conditions would ensure consistency with the EPA objective for social surroundings.	minimise impacts to cultural values.

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors and environmental values individually in the key factor assessments above, given the link between the key environmental factors the EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole environment.

Flora and vegetation, Terrestrial fauna, Inland waters and Subterranean fauna

Flora and vegetation, terrestrial fauna and subterranean fauna have an integral reliance on inland waters to sustain and maintain growth. Groundwater and surface water catchments also sustain subterranean fauna. The flora and vegetation provide important habitat to fauna, including conservation significant fauna and SREs. Minimising impacts to flora and vegetation and maintaining habitat connectivity will minimise impacts to terrestrial fauna.

The surface water catchments and groundwater aquifers of the proposal area support groundwater-dependent ecosystems such as vegetation and fauna habitat, which are an important environmental and cultural asset. The EPA recognises that there are inherent links between the inland waters factor and other environmental factors. For example, changes to the quality or quantity of inland waters can affect flora and vegetation, and social surroundings. The ecosystem health values related to inland waters generally include ability to sustain vegetation, aquatic fauna and terrestrial fauna habitat and the ecological processes that support them, including the strong cultural links for the Nyiyaparli People.

The EPA considers that the proposed mitigation and management measures and recommended conditions for managing impacts to flora and vegetation, terrestrial fauna, inland waters and subterranean fauna will also mean the inter-related impacts to the health of other factors of the environment including the values associated with greenhouse gas emissions, air quality and social surroundings are likely to be consistent with the EPA's environmental factor objectives. In addition, the EPA considers that the recommended conditions and the proposed mitigation and management measures for impacts to inland waters will also mean the interrelated impacts to the health of other environmental factors, including the values associated with flora and vegetation, terrestrial fauna, subterranean fauna, and social surroundings are likely to be consistent with the EPA's environmental factor objectives.

Greenhouse Gas Emissions

There is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will impact on Western Australia's environment and environmental values.

The EPA considers that the proposed mitigation conditions to regulate GHG emissions will also mean that the impacts to other factors and values of the environment including the values associated with flora and vegetation, terrestrial fauna, inland waters, subterranean fauna, air quality and social surroundings are likely to be consistent with the EPA environmental factor objectives.

Social surroundings

Aboriginal cultural associations, including traditional Aboriginal customs, directly link to the physical or biological aspects of the environment. This may include hunting and collecting traditional bush foods and medicine which may be disrupted from impacts to flora and vegetation and fauna.

Water resources are of great importance to the Nyiyaparli People. The impact assessment has considered the strong connections of the Nyiyaparli People to the land, and the potential impacts that restricted access to country, disturbance from the proposal and changes to ground and surface water, flora and vegetation, including riparian vegetation, and terrestrial fauna may have on this connection.

The EPA considers that the proposed mitigation and management measures and recommended conditions for managing impacts to social surroundings will also mean the inter-related impacts to the health of other factors of the environment including the values associated with flora and vegetation, terrestrial fauna, inland waters, subterranean fauna and greenhouse gas emissions are likely to be consistent with the EPA's environmental factor objectives.

Summary of holistic assessment

When the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the EPA formed the view that the impacts from the proposal would not alter the EPA's views about consistency with the EPA's factor objectives as assessed in section 2.

The EPA recommends environmental performance reporting should be required in implementation conditions from the proponent, given the interconnected environmental values in the area likely to be affected by the proposal, and the 36-year life of the proposal. This environmental performance reporting will provide the proponent and the Minister with renewed and current information about the performance of the proposal with respect to environmental values over the life of the project.

Given the cumulative nature of many impacts in the area likely to be affected by the proposal, the EPA recommends the proponent be permitted to prepare the report in whole or part with other proponents who have proposals operating there.

4 Offsets

Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual impacts of a proposal.

Consistent with the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014), the EPA may consider the application of environmental offsets to a proposal where it determines that the residual impacts of a proposal are significant, after avoidance, minimisation and rehabilitation have been pursued.

The EPA considers that the clearing of native vegetation and impacts on other associated environmental values in the Pilbara IBRA bioregion is significant where the cumulative impact may reach critical levels if not managed. The Pilbara's unique land tenure hampers the delivery of offsets, and the PEOF has been established to provide a strategic landscape-scale approach that builds on regional programs to deliver environmental offset outcomes greater than can be achieved by individual proposals.

The PEOF's Governance Framework establishes transparent decision-making processes, clarity of roles and responsibilities, and guidance for project delivery. The DWER administers the PEOF with involvement from an Implementation Advisory Group made up of key stakeholders and experts and a Project Recommendation Group made up of representatives from State and Australian governments. The Minister for Environment is the primary decision-maker for the PEOF and approves projects that will address significant residual impacts and receive monies from the PEOF.

Projects currently being delivered or developed through the PEOF include improvement to critical and supporting habitat for six Matters of National Environmental Significance fauna species, ongoing management of landscape scale threatening processes including but not limited to, large feral herbivore management, exclusion fencing, invasive flora and fauna management and integrated riparian management. Together, these programs aim to control threatening processes to improve vegetation condition and habitat for fauna, including threatened fauna. The DBCA is also reviewing and developing management and research priorities for northern quoll, greater bilby, ghost bat, Pilbara leaf-nosed bat and Pilbara olive python to guide future investment in fauna programs (Western Australian Government 2024).

The proposal is located within the Fortescue and Hamersley IBRA subregions. The special purpose account statement for the PEOF states that monetary contributions can be accepted in the fund for proposals located wholly or partly within the Pilbara IBRA region.

In the case of this proposal, likely (and potential) significant impacts are:

- flora and vegetation values
- significant fauna habitat values.

Environmental offsets are not appropriate in all cases. In this case the EPA considers offsets are appropriate because the proposal would result in significant residual impacts to:

- 'Good' to 'Excellent' condition native vegetation

- critical habitat for northern quoll
- supporting habitat for northern quoll, Pilbara olive python, greater bilby and ghost bat.

The EPA has concluded that the clearing of habitat is a significant residual impact on its own, in the context of the proposal, and in the context of the biological diversity and ecological integrity in the local area, as it provides habitat for threatened fauna species.

Due to the remaining quantity and quality of habitat types in the local area and region, the EPA considers that the significant residual impact could be counterbalanced in accordance with the WA Environmental Offsets Guidelines by a contribution to the PEOF. The EPA considers PEOF future projects are expected to be able to counterbalance the significant impacts from the clearing of native vegetation (including conservation significant ecological communities) and supporting fauna habitat of the proposal. The EPA notes that PEOF Governance Framework (August 2019) states that projects will aim to counterbalance the significant residual impacts that have been identified in ministerial statements with projects that are designed to deliver enduring and long-term strategic conservation outcomes in the Pilbara. PEOF Implementation Plans identify the significant residual impacts for which contributions to the Fund have been made and how they will be addressed.

The EPA recommends condition B8 (Pilbara Environmental Offsets Fund) be imposed on the proponent to provide an offset in the form of a contribution to the PEOF, to counterbalance the significant residual impacts of the proposal.

The EPA recognises the challenges in delivering offset projects that contribute to the protection and restoration of critical fauna habitat for conservation significant fauna species, such as those impacted through this proposal. PEOF has confirmed that it is possible to be able to offset the vegetation and fauna habitat at a landscape level in the Fortescue and Hamersley IBRA subregions, including critical habitat for northern quoll and supporting habitat for northern quoll, ghost bat, Pilbara olive python and greater bilby as a result of the proposal's impacts. However, the PEOF is unable to offset specific values required for species survival such as bat caves in specific rock formations.

The EPA recommends that the following offset rates (calculated on the 2023-2024 financial year, subject to annual indexation) should apply in the form of a contribution to the PEOF for landscape scale actions to protect biodiversity in the Pilbara:

- \$986 AUD (excluding GST) per hectare of 'Good' to 'Excellent' condition native vegetation cleared as a result of the proposal within the Hamersley IBRA subregion
- \$1,972 AUD (excluding GST) per hectare of riparian vegetation cleared as a result of the proposal within the Hamersley IBRA subregion
- \$1,972 AUD (excluding GST) per hectare of critical habitat in the Hamersley IBRA subregion for northern quoll
- \$986 AUD (excluding GST) per hectare of supporting habitat in the Hamersley IBRA subregion for northern quoll, Pilbara olive python, greater bilby and ghost bat

- \$1,972 AUD (excluding GST) per hectare of 'Good' to 'Excellent' condition native vegetation cleared as a result of the proposal within the Fortescue IBRA subregion
- \$3,944 AUD (excluding GST) per hectare of riparian vegetation as a result of the proposal within the Fortescue IBRA subregion
- \$3,944 AUD (excluding GST) per hectare of critical habitat in the Fortescue subregion for northern quoll
- \$1,972 AUD (excluding GST) per hectare of supporting habitat in the Fortescue subregion for northern quoll, Pilbara olive python, greater bilby and ghost bat.

5 Recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the EP Act.

The EPA recommends that the proposal may be implemented subject to the conditions recommended in Appendix A.

6 Other advice

The EPA may, if it sees fit, include other information, advice or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal.

The EPA reiterates its section 16(e) advice to the Minister on the Cumulative environmental impacts of development in the Pilbara region (2014), that mining has occurred in the Pilbara for over 60 years, and limited evidence remains that proponents have successfully rehabilitated any areas that have been subject to large-scale mining.

Through the recommended conditions for this proposal and strategic engagement with proponents more broadly, the EPA looks forward to receiving evidence that progress is being made towards demonstrating that successful rehabilitation at relevant rates, and mine scales can be achieved post-mining, and the increasing gap between cleared and rehabilitated areas is progressively being narrowed.

The technical and practical feasibility of proponent's proposed rehabilitation will be a consideration in EIA of future mining projects in the Pilbara, and therefore understanding the successes and challenges of current rehabilitation activities and forward planning will be a key issue for the EPA in future assessments in the Pilbara.

The EPA further notes that the rehabilitation and closure of mining and associated activities should consider the involvement of Traditional Owners at all stages, including the design of waste landforms, seed collection, revegetation, and re-establishment of natural water flows.

Appendix A: Recommended conditions

Section 44(2)(b) of *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This appendix contains the EPA's recommended conditions and procedures.

Recommended Environmental Conditions

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (*Environmental Protection Act 1986*)

JIMBLEBAR HUB SIGNIFICANT AMENDMENT

Proposal: For the expansion and amalgamation of existing BHP Iron Ore Pty Ltd iron ore mining operations (Ministerial Statement 1126, 439/1012 and 1021).

Proponent: BHP Iron Ore Pty Ltd
Australian Company Number 008 700 981

Proponent address: 125 St Georges Terrace
PERTH WA 6000

Assessment number: 2397

Report of the Environmental Protection Authority: 1793

Introduction: The proposal is a significant amendment to the following existing proposals:

- Jimblebar Optimisation Project under Ministerial Statement (MS) 1126 (Report 1663, EPA Assessment Number 2223)
- Orebody 18 Iron Ore Mine under MS 439 (Report 840, EPA Assessment Number 978) and MS 1012 (Report 1550, EPA Assessment Number 2051)
- Orebody 31 Iron Ore Mine under MS 1021 (Report 1559, EPA Assessment Number 2047).

Pursuant to section 45 of the *Environmental Protection Act 1986*, it is now agreed that:

1. the proposal (described in condition A1-1), may be implemented;
2. Ministerial Statement 1126, 439, 1012 and 1021 for the above existing proposals are superseded under section 40AA (6) (b) of the *Environmental Protection Act 1986*; and

3. the implementation of the significant amended proposal (being the existing approved proposal as amended by the significant amendment proposal as shown in Figure 1) is subject to the following implementation conditions and procedures.

Conditions and procedures

Part A: Proposal extent

Part B: Environmental outcomes, prescriptions and objectives

Part C: Environmental management plans and monitoring

Part D: Compliance and other conditions

PART A: PROPOSAL EXTENT

A1 Limitations and Extent of Proposal

A1-1 The proponent must ensure that the proposal is implemented in such a manner that the following limitations or maximum extents / capacities / ranges are not exceeded:

Proposal element	Location	Maximum extent
Physical elements		
Development envelope	Figure 1	Development envelope of 24,684 ha
Direct disturbance of native vegetation	Figure 1	Clearing of no more than 12,262 ha of native vegetation within the development envelope of 24,684 ha. Clearing of no more than 6,521 ha of 'Good' to 'Excellent' condition native vegetation. Disturbance limit of 52.6 ha of riparian vegetation. Disturbance limit of 2.5 ha of breakaway/cliff habitat for the significant amendment. Disturbance limit of 7.6 ha of gorge/gully habitat for the significant amendment.
Operational elements		
Groundwater abstraction - mine pit dewatering and water supply	-	Groundwater abstraction of up to 69.2 GL/a.
Surplus water management – discharge to Ophthalmia Dam managed aquifer recharge (MAR) system	Figure 1	Discharge of up to 32.625 GL/a surplus water to the Ophthalmia Dam system.
Aquifer injection	Figure 1	Caramulla MAR Groundwater injection of up to 10.95 GL/a surplus water in the Caramulla MAR area. Ground water level to be no higher than 25 m below ground level.

		Orebody 18 (Ninga) MAR Groundwater injection of up to 13.14 GL/a surplus water in the Orebody 18 (Ninga) MAR area. Ground water level to be no higher than 10 m below ground level.
Surface water discharge to watercourses	Figure 1	Caramulla Creek Controlled discharge of up to 27.375 GL/a surplus water from the Caramulla Creek discharge point. Surplus water must not extend further than 34 km along Caramulla Creek from the Caramulla discharge point, during natural, no-flow conditions. Jimblebar Creek Controlled discharge of up to 4 GL surplus water for a maximum three months per year for contingency purposes and must not extend further than 16 km along Jimblebar Creek from the Orebody 31 discharge point, during natural no-flow conditions. Controlled discharge of up to 2.19 GL/a surplus water must not extend further along Jimblebar Creek than 200 m from the upstream extent of Innawally Pool, during natural no-flow conditions.
Proposal element	Location	Limitation or maximum extent
Tailings storage – in-pit tailings storage facilities	-	Option to dispose of tailings at mine pit voids at Orebody 17/18, Orebody 31 and Jimblebar.
Mine pit voids and pit lakes	-	Option for open voids and formation of pit lake/s.
Timing elements		
Project life	-	Approximately 46 years (construction , operation, decommissioning and closure (to rehabilitation execution)) from the date of issue of this statement.

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

B1 Flora and Vegetation

B1-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcome** for the **proposal**:

- (1) **disturb** no more than 6,521 ha of 'Good' to 'Excellent' condition native vegetation;
- (2) **disturb** no more than 52.6 ha of riparian vegetation;
- (3) disturb no more than 5,360 individuals of *Eremophila capricornica* (P1);
- (4) no **adverse impacts** to *Eremophila capricornica* (P1) populations as shown in Figure 8-7 of the Jumblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document – referral supplementary report (BHP 2025);
- (5) no **disturbance** to *Acacia corusca* (P1) within the mining exclusion zones as shown in Figures 4a and 4b;
- (6) no **adverse impacts** to *Acacia corusca* populations; and
- (7) maintain the **viability** of *Acacia corusca* at the population level.

B1-2 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes** for the **significant amendment**:

- (1) no **disturbance**, including mining activities, pits, excavations waste dumps and permanent structures, within the mining exclusion zone as shown Figure 4a.

B1-3 Prior to **clearing** each area to be disturbed within the **conceptual footprint** of the **significant amendment**, the proponent must undertake **pre-clearance survey(s)** of unsurveyed areas shown in Figure 5, in accordance with **Technical guidance – Flora and vegetation surveys for environmental impact assessment** (EPA 2016) (or any approved updates of these guidelines). **Pre-clearance surveys** shall target the following species:

- (1) *Acacia corusca* (P1); and
- (2) *Eremophila capricornica* (P1).

B1-4 The proponent shall implement appropriate management measures to achieve the following environmental **objectives** for the **significant amendment**:

- (1) minimise **disturbances** to flora and vegetation including but not limited to impacts from, altered groundwater and surface water regimes, bushfire, dust, and environmental weeds; and

- (2) minimise **disturbances** on remaining extents of significant vegetation and **priority flora**.
- B1-5 The proponent must ensure the implementation of the **proposal** achieves the following environmental **objective** for the **proposal**:
- (1) minimise direct and indirect impacts on flora taxa listed as **priority flora**.
- B1-6 The proponent must, in consultation with **DBCA**, review and update the Jimblebar Hub Flora and Vegetation Management Plan – FINAL (December 2023, Version 1) that satisfies the requirements of condition C4 and C5 and demonstrates how achievement of the environmental **outcomes** and **objectives** in conditions B1-1(4), B1-1(6), B1-1(7) and B1-5 will be monitored and substantiated, and submit it to the **CEO**.
- B1-7 The proponent shall, within twelve (12) months of the date of this Statement, or otherwise agreed to by the **CEO**, prepare and submit an *Acacia corusca* Conservation and Research Plan on advice from **DBCA** to the satisfaction of the **CEO**.
- B1-8 The *Acacia corusca* Conservation and Research Plan identified in condition B1-7 shall include:
- (1) results of targeted flora surveys or where surveys have not been completed, to provide further information on the conservation and baseline conservation status of *Acacia corusca* within the region;
 - (2) details of suitable conservation measures such as seed collection and germplasm storage, seeding or translocation trials to be undertaken to determine the likelihood of successful establishment, during mine site rehabilitation or other suitable measures, for conservation of the species;
 - (3) details on research to be undertaken into the habitat, biology and conservation of the species;
 - (4) timeframes and responsibilities for the implementation of proposed conservation measures; and
 - (5) a monitoring programme and criteria for determining the efficacy of the proposed conservation measures.
- B1-9 The proponent shall submit a report to the **CEO** documenting the results of the *Acacia corusca* Conservation and Research Plan, identifying the success of the conservation measures required by condition B1-8(2) and the findings of the research required by condition B1-8(3) within 6 months of completion of the measures set out in the approved plan.

Terrestrial Fauna

B2-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

- (1) for the **significant amendment, disturb** no more than:
 - (a) 2.5 **ha** of fauna habitat identified as **breakaway/cliff habitat** as shown in Figure 6;
 - (b) 7.6 **ha** of fauna habitat identified as **gorge/gully habitat** as shown in Figure 6; and
 - (c) one (1) ghost bat cave (category 4) as shown in Figure 7.
- (2) no **disturbance** to ghost bat (*Macroderma gigas*) within the **Mining Exclusion Zones** in Figure 8 attributable to the **significant amendment**; and
- (3) no detectable increase in feral cat abundance in the **development envelope** from baseline levels during the life of the **proposal** relative to suitable reference sites.

B2-2 The proponent must undertake targeted feral cat control within the **development envelope**, including at the entrance of ghost bat diurnal roosts, to achieve the outcome in condition B2-1(3); and

B2-3 The proponent must avoid, and where unavoidable, minimise impacts to **critical habitat** attributable to the **significant amendment**, including from dust emissions, spread or introduction of environmental weeds, fire, altered hydrological regimes, habitat fragmentation and contamination.

Clearing for ground disturbance activities

B2-4 Prior to **ground disturbing activities** for the **significant amendment** the proponent shall undertake the following actions:

- (1) within seven (7) days prior to **clearing gorge/gully and breakaway/cliff habitat types or supporting habitat**, using a **fauna spotter**, undertake **pre-clearance inspection(s)** of the areas to be cleared to **detect** presence of northern quoll (*Dasyurus hallucatus*);
- (2) within seven (7) days prior to **clearing** cave CJIM-04, using a **fauna spotter**, undertake **pre-clearance inspection(s)** to **detect** presence of ghost bat (*Macroderma gigas*);
- (3) within seven (7) days prior to **clearing major drainage line** habitat type, using a **fauna spotter**, undertake **pre-clearance inspection(s)** to **detect** the presence of grey falcon (*Falco hypoleucos*) occupied nests;

- (4) where northern quoll (*Dasyurus hallucatus*), ghost bat (*Macroderma gigas*), and grey falcon (*Falco hypoleucos*) occupied nests are detected, **ground disturbing activities** shall not commence until either:
- (a) the finding has been notified to the **CEO** and **DBCA**; and
 - (b) either:
 - (i) the individual has been relocated by a licensed **fauna handler** to a **critical habitat**; or
 - (ii) grey falcons (*Falco hypoleucos*) are no longer using the nest during the **maternity season**; or
 - (iii) the individual has been observed by the **fauna spotter** to have moved on from the area to adjoining **critical habitat**; and
 - (iv) the **fauna spotter** considers that the individual no longer occurs in the area to be cleared/disturbed.
 - (c) once ghost bats (*Macroderma gigas*) individual(s) are confirmed to be completely excluded from the cave CJIM-04, the cave entrance needs to be sealed, or exclusion devices (light and/or noise emitting) shall be installed, to prevent them from returning prior to **ground disturbing activities**.

B2-5 The proponent must submit as part of the Compliance Assessment Report required by condition D2, a report on fauna management undertaken, in line with condition B2-4. The report shall include the following:

- (1) details of fauna inspections;
- (2) dates and details of **clearing activities** for each area inspected;
- (3) the number and type of fauna removed and relocated and actions taken;
- (4) details of the **fauna spotter** and **fauna handler** commissioned;
- (5) results of the **pre-clearance surveys** and **pre-clearance inspections**; and
- (6) vertebrate fauna mortalities.

B2-6 In the event of change in the **conceptual footprint**, and where survey has not been completed, the proponent must undertake surveys for **threatened fauna** within the new unsurveyed **conceptual footprint** and submit findings and mitigation measures to the **CEO** for approval prior to the **ground disturbing activities** within the new unsurveyed **conceptual footprint**.

Haul road/ infrastructure fencing

B2-7 Barbed wire fencing, where it is demonstrated to be required for the **significant amendment**, must be installed with the top strand as a single strand wire and with suitable **bat deflectors**.

Speed limits

B2-8 During **ground disturbing activities** and operational activities, vehicle and machinery speed limits within the **development envelope** must not exceed:

- (1) 60 **km/hr** within 1 km of **gorge/gully** and **breakaway/cliff habitat types** during day time hours and on unsealed roads during night-time hours.

B3 Inland Waters and Subterranean Fauna

B3-1 The proponent must implement the **proposal** to achieve the following environmental **outcomes**:

- (1) maintain habitat, groundwater levels and water quality in the Ethel Gorge aquifer to support the stygofauna habitat of the **Ethel Gorge TEC**;
- (2) maintain the current (altered) ephemeral surface water regime to the Fortescue River downstream of Ophthalmia Dam as a result of releases of water from Ophthalmia Dam.

B3-2 The proponent must implement the **proposal** to achieve the following environmental **outcomes**:

- (1) no **adverse impacts** to Innawally Pool;
- (2) groundwater level to rise no more than 25 **mbgl** in the regional aquifer from groundwater injection of surplus water in the Caramulla MAR area;
- (3) groundwater level to rise no more than 10 **mbgl** in the regional aquifer from groundwater injection of surplus water in the Orebody 18 (Ninga) MAR area;
- (4) surface water flow along Caramulla Creek from controlled discharge of surplus water to extend no further than 34.6 **km** from Caramulla Creek discharge point under natural no-flow conditions;
- (5) surface water flow along Jimblebar Creek to extend no further than 200 m from the upstream extent of Innawally Pool under natural no-flow conditions;
- (6) surface water flow along Jimblebar Creek from controlled discharge of surplus water to extend no further than 16 **km** from Orebody 31 Creek discharge point under natural no-flow conditions;

- (7) no **adverse impacts** to the riparian tree species along Caramulla due to the controlled discharge of surplus water into Caramulla Creek; and
- (8) no **adverse impacts** to the riparian tree species along Jimblebar Creek due to the controlled discharge of surplus water into Orebody 31 Creek.

B3-3 The proponent must implement the Eastern Pilbara Water Resource Management Plan, with the purpose of ensuring the environmental outcomes in condition B3-1 are achieved, monitored and substantiated.

B3-4 The proponent must implement the Jimblebar Hub Water Management Plan, with the purpose of ensuring the environmental outcomes in condition B3-2(1), B3-2(2), B3-2(3), B3-2(4), B3-2(5) and B3-2(6) are achieved, monitored and substantiated.

B3-5 The proponent must implement the Flora and Vegetation Management Plan with the purpose of ensuring the environmental outcomes in condition B3-2(7) and B3-2(8) are achieved, monitored and substantiated.

B4 Greenhouse Gas Emissions

B4-1 The proponent must notify the **CEO** in writing within one month of it becoming aware that implementation of the proposal will not be or is not expected to be regulated under the **Safeguard Legislation** as a designated large facility (the notifiable event) and such notice must briefly describe the reasons for and expected duration of the notifiable event.

B4-2 The proponent must, if requested in writing by the **CEO**, provide the **CEO** with a report on the implications for the proposal of any amendment or proposed amendment to the **Safeguard Legislation**, or a decision or proposed decision made under the **Safeguard Legislation** that is specified in the **CEO's** request.

B4-3 The report required by condition B4-2 must:

- (1) be submitted to the **CEO** within three months of the date of the **CEO's** request or such longer period as the **CEO** agrees to in writing; and
- (2) explain the implication that the specified amendment or decision has had or is expected to have on:
 - (a) the obligation to reduce net Scope 1 **greenhouse gas emissions** from implementation of the proposal under the **Safeguard Legislation**; and
 - (b) the quantity of actual net Scope 1 **greenhouse gas emissions** likely to result from the future implementation of the proposal.

B5 Aboriginal cultural heritage

B5-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental outcomes for the **significant amendment**:

- (1) no disturbance to any **Aboriginal cultural heritage sites** unless consent is granted, or authority is given to disturb that site under the *Aboriginal Heritage Act 1972* and has involved reasonable steps to consult with the **relevant Traditional Owners**; and
- (2) subject to reasonable health and safety requirements, no interruption of ongoing access to land utilised for traditional use or custom by the **relevant Traditional Owners**.

B5-2 The proponent must implement the **proposal** to meet the following environmental **objective**:

- (1) avoid, and where unavoidable, minimise **adverse impacts** to **Aboriginal cultural heritage** within and surrounding the **development envelope**.

B5-3 The proponent must take **reasonable steps to consult** with the **relevant Traditional Owners** about the achievement of the **outcomes** in condition B3-1(2), B3-2(1), B3-2(4), B3-2(5), B3-2(6), B3-2(7), B3-2(8) and B5-1(2) for the life of the **proposal**.

B5-4 The proponent must undertake reasonable consultation with the **relevant Traditional Owners** on:

- (1) the design of waste rock landforms, pit voids and lakes as part of the Mine Closure Plan required under condition B7-2.

B6 Rehabilitation

B6-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

- (1) flora and vegetation within rehabilitated areas are comparable with ecosystem structure and composition within suitable analogue or reference sites;
- (2) rehabilitated ecosystems are self-sustaining;
- (3) rehabilitated landforms are stable, do not cause pollution or **environmental harm**;
- (4) rehabilitated drainage lines are stable and support ecological processes with no erosion features present that compromise rehabilitated landform stability;
- (5) the post-mining profile, for ex pit rehabilitated landforms, will be designed in consideration of visually integrating into the surrounding undisturbed

landscape, continuing the surrounding contours of the low hills and slopes; and

- (6) pits will be backfilled above post mining recovered water levels where there is a closure acid and/or metalliferous drainage risk and a demonstratable moderate or high risk of that drainage **disturbing** sensitive environmental or cultural heritage receptors.

B6-2 The proponent must ensure that the rehabilitation of ecosystems to achieve the outcomes in condition B6-1 is undertaken in a **progressive manner** during the rehabilitation planning phase, during operations, and as soon as practicable upon closure, to increase the rates of rehabilitation and deliver improved outcomes.

B6-3 The proponent must commence rehabilitation for areas cleared for infrastructure, roads or access within eighteen (18) months of that infrastructure, road or access no longer being required.

B6-4 The proponent must ensure that the process for rehabilitating ecosystems to achieve the outcomes in condition B6-1:

- (1) uses seed of **local provenance** which also contains *Acacia corusca* and *Eremophila capricornica*;
- (2) incorporates relevant and contemporary scientific outcomes;
- (3) incorporates regeneration or revegetation strategies which may be required for *Acacia corusca* and components of communities, including further investigations to determine appropriate regeneration methodologies, if the completion criteria for this species are not being achieved;
- (4) develops and implements management and/or mitigation actions to address any failure in achieving the completion criteria;
- (5) includes relevant research, investigations, trials and monitoring programs, targeting key issues in rehabilitation, to improve rehabilitation techniques, practices and outcomes; and
- (6) ensures outcomes from previous research, investigations, trials and monitoring programs have been incorporated into rehabilitation techniques and practices.

B6-5 The proponent must prepare a Rehabilitation Strategy and submit to the **CEO**. The Rehabilitation Strategy must:

- (1) detail the types of ecosystems and total area of rehabilitation that the proponent will be required to rehabilitate across the development envelope consistent with the outcomes in condition B6-1; and
- (2) outline the rehabilitation strategy for the **proposal** that satisfies the requirements of conditions B6-2, B6-3 and B6-4 and demonstrates how achievement of the outcomes in condition B6-1 will be monitored and substantiated;
- (3) provide the expected timing and hectares of rehabilitation over the life of the **proposal** to demonstrate the achievement of condition B6-2.

B6-6 The proponent must prepare a Rehabilitation Performance Report and submit to the **CEO**. The Rehabilitation Report must:

- (1) provide an analysis of the rehabilitation processes and outcomes that the proponent has undertaken for the proposal since the commencement of mining, and those required by condition B6-4, and how these processes have been incorporated into past rehabilitation;
- (2) provide historical rates of rehabilitation for the proposal, an explanation of these rates and an analysis of the demonstrated success of that rehabilitation over time against the completion criteria;
- (3) provide evidence-based and effective completion criteria that demonstrate the achievement of the outcomes in condition B6-1;
- (4) provide annual reporting, commencing no later than the date of this Statement, on:
 - (a) hectares rehabilitated; and
 - (b) rehabilitation outcomes against the completion criteria.
- (5) detail the locations and hectares to be rehabilitated over the next five (5) years;
- (6) discuss the likely success of future rehabilitation activities in establishing self-sustaining ecosystems in consideration of:
 - (a) relevant contemporary scientific evidence and outcomes;
 - (b) outcomes of research, investigations, trials and monitoring programs; and
 - (c) the types of ecosystems to be rehabilitated.

- (7) Discuss future rehabilitation processes to be implemented to ensure the likely success of future rehabilitation activities in establishing self-sustaining ecosystems.

B7 Mine Closure

B7-1 The proponent must ensure the implementation of the **proposal** achieves the following environmental **outcomes**:

- (1) Mining activities are rehabilitated and closed in a manner to make them physically safe to humans and animals, geotechnically stable, geochemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use, with consideration for cultural values.

B7-2 The proponent must review and update the Mine Closure Plan in accordance with the Department of Mines, Petroleum and Exploration's Guideline for Mine Closure Plans March 2025 (or any subsequent revisions of the guidelines) and submit to the **CEO**.

B8 Pilbara Environmental Offsets Fund

B8-1 The proponent must contribute funds to the **Pilbara Environmental Offsets Fund** calculated pursuant to condition 8-8(2), to achieve the objective of counterbalancing the significant residual impacts to the following environmental values:

- (1) **'Good' to 'Excellent' condition native vegetation;**
- (2) **Riparian vegetation;**
- (3) **Critical habitat** for northern quoll (*Dasyurus hallucatus*) subject to any reduction approved by the **CEO** under condition B8-9; and
- (4) **Supporting habitat** for greater bilby (*Macrotis lagotis*), northern quoll (*Dasyurus hallucatus*), ghost bat (*Macroderma gigas*) and Pilbara olive python (*Liasis olivaceus barroni*), subject to any reduction approved by the **CEO** under condition B8-9.

B8-2 The proponent's contribution to the **Pilbara Environmental Offsets Fund** must be paid biennially, with the amount to be contributed calculated based on the **clearing** undertaken in each year of the biennial reporting period in accordance with the rates in condition B8-3. The first biennial reporting period must commence from **ground disturbing activities** of the **environmental value(s)** identified in condition B8-3.

B8-3 Calculated on the 2023-2024 financial year, the contribution rates are:

- (1) \$986 (excluding GST) per hectare of **‘Good’ to ‘Excellent’ condition native vegetation** cleared as a result of the **proposal** within the Hamersley **IBRA** subregion;
- (2) \$1,972 AUD (excluding GST) per hectare of **riparian vegetation** and important vegetation types, including potentially restricted vegetation, cleared as a result of the **proposal** within the Hamersley **IBRA** subregion;
- (3) \$986 AUD (excluding GST) per hectare of **supporting habitat** for the following values cleared in the Hamersley **IBRA** subregion as a result of the **proposal**:
 - (a) northern quoll (*Dasyurus hallucatus*) **supporting habitat**;
 - (b) ghost bat (*Macroderma gigas*) **supporting habitat**;
 - (c) Pilbara olive phyton (*Liasis olivaceus barroni*) **supporting habitat**; and
 - (d) bilby (*Macrotis lagotis*) **supporting habitat**.
- (4) \$1,972 AUD (excluding GST) per hectare of **critical habitat** for the following values cleared in the Hamersley **IBRA** subregion as a result of the **proposal**:
 - (a) northern quoll (*Dasyurus hallucatus*) **critical habitat**;
- (5) \$1,972 (excluding GST) per hectare of **‘Good’ to ‘Excellent’ condition native vegetation** cleared as a result of the **proposal** within the Fortescue **IBRA** subregion;
- (6) \$3,944 (excluding GST) per hectare of **riparian vegetation** cleared as a result of the **proposal** within the Fortescue **IBRA** subregion;
- (7) \$1,972 (excluding GST) per hectare of **supporting habitat** for the following values cleared in the Fortescue **IBRA** subregion as a result of the **proposal**:
 - (a) northern quoll (*Dasyurus hallucatus*) **supporting habitat**;
 - (b) ghost bat (*Macroderma gigas*) **supporting habitat**;
 - (c) Pilbara olive phyton (*Liasis olivaceus barroni*) **supporting habitat**; and
 - (d) bilby (*Macrotis lagotis*) **supporting habitat**.

- (8) \$3,944 (excluding GST) per hectare of **critical habitat** for the following values cleared in the Fortescue **IBRA** subregion as a result of the **proposal**:

(a) northern quoll (*Dasyurus hallucatus*) **critical habitat**.

B8-4 The rates in condition B8-3 change annually each subsequent financial year in accordance with the percentage change in the **CPI** applicable to that financial year.

B8-5 To achieve the objective in condition B8-1, the proponent must review and revise the Impact Reconciliation Procedure - Jimblebar Hub Iron Ore Mining Operations, December 2023 and submit to the **CEO** for approval. This procedure must:

- (1) spatially define the **environmental values** identified in condition B8-1;
- (2) spatially define the areas where offsets required by condition B8-1 are to be exempt;
- (3) include a methodology to calculate the amount of **clearing** undertaken during each year of the biennial reporting period for each of the **environmental values** identified in condition B8-3;
- (4) state that **clearing** calculation for the first biennial reporting period will commence from **ground disturbing activities** in accordance with condition B8-2 and end on the second 30 June following commencement of **ground disturbing activities**;
- (5) state that **clearing** calculations for each subsequent biennial reporting period will commence on 1 July of the required reporting period, unless otherwise agreed by the **CEO**; and
- (6) be prepared in accordance with Instructions on how to prepare *Environmental Protection Act 1986 Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports* (or any subsequent revisions).

B8-6 The proponent must review, revise and submit an Impact Reconciliation Report in accordance with the **confirmed** Impact Reconciliation Procedure in condition B8-5.

B8-7 The Impact Reconciliation Report required pursuant to condition B8-6 must:

- (1) provide the location and spatial extent of the **clearing** undertaken as a result of the **proposal** during each year of each biennial reporting period; and

- (2) include evidence that **clearing** undertaken in any area was necessary for the commencement of **proposal**-related activities or operations in that cleared area within six (6) months of the **clearing** having occurred.

B8-8 The proponent may apply in writing and seek the written approval of the **CEO** to reduce all or part of the contribution payable under condition B8-2 where:

- (1) a payment has been made to satisfy a condition of an approval under the *Environment Protection and Biodiversity Conservation Act 1999* in relation to the **proposal**; and
- (2) the payment is made for the purpose of counterbalancing impacts of the **proposal** on matters of national environmental significance.

B8-9 The **CEO** may grant approval to discount the amount payable under condition B8-1(3) and condition B8-1(4) if the **CEO** is satisfied that the payment will offset the significant residual impacts of the **proposal**.

B8-10 The clearing of native vegetation authorised under Ministerial Statement 439 prior to 3 February 2015 and the 4,644 ha of **clearing** of native vegetation previously approved under Ministerial Statements 683, 809 and 857 prior to 22 October 2015 is exempt from the requirement to offset under condition B8-1.

B8-11 Condition C2 applies to the **confirmed** Impact Reconciliation Procedure required by condition B8-5 as if it were an environmental management plan.

B8-12 Failure to implement a **confirmed** Impact Reconciliation Procedure or submit an Impact Reconciliation Report as required by condition B8-6 represents a non compliance with these conditions.

PART C – ENVIRONMENTAL MANAGEMENT PLANS AND MONITORING

C1 Environmental Management Plans: Conditions Related to Commencement of Implementation of the Proposal

C1-1 The proponent must:

- (1) within twelve (12) months of the date of this Statement, or otherwise agreed to by the **CEO**, revise and submit the Environmental Management Plan required by conditions B1-6, B3-3, B3-4 and B3-5 to meet the requirements of those conditions;
- (2) within twelve (12) months of the date of this Statement, or otherwise agreed to by the **CEO**, submit the *Acacia corusca* Conservation and Research Plan required by condition B1-7 on advice of **DBCA**, that meets the requirements of that condition;
- (3) within twelve (12) months of the date of this Statement, or otherwise agreed to by the **CEO**, submit the Rehabilitation Strategy required by condition B6-5, on advice of **DBCA**, that meets the requirements of that condition;
- (4) within twelve (12) months of the date of this Statement, or otherwise agreed to by the **CEO**, and five-yearly thereafter, submit the Rehabilitation Performance Report required by condition B6-6, on advice from **DBCA**, that meets the requirement of that condition;
- (5) within twelve (12) months of the date of this Statement and every five years thereafter, or otherwise agreed to by the **CEO**, revise and submit the Mine Closure Plan required by condition B7-2 that meets the requirements of that condition, until the **CEO**, on advice of Department of Mines, Petroleum and Exploration; the Department of Water and Environmental Regulation and the **DBCA**, has confirmed in writing that the Mine Closure Plan required by condition B7-2 meets the requirement of that condition.
- (6) within (12) twelve months of the date of this Statement revise and submit the Impact Reconciliation Procedure (Offsets) required by condition B7-6 that meets the requirements of that condition.

C2 Environmental Management Plans: Conditions Relating to Approval, Implementation, Review and Publication

C2-1 Upon being required to implement an environmental management plan under Part B, or after receiving notice in writing from the **CEO** under condition C1-1 that the environmental management plan(s) required in Part B satisfies the relevant requirements, the proponent must:

- (1) implement the most recent version of the **confirmed** environmental management plan; and
- (2) continue to implement the **confirmed** environmental management plan referred to in condition C2-1(1), other than for any period which the **CEO** confirms by notice in writing that it has been demonstrated that the relevant requirements for the environmental management plan have been met, or are able to be met under another statutory decision-making process, in which case the implementation of the environmental management plan is no longer required for that period.

C2-2 The proponent:

- (1) may review and revise a **confirmed** environmental management plan provided it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan;
- (2) must review and revise a **confirmed** environmental management plan and ensure it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan, as and when directed by the **CEO**; and
- (3) must revise and submit to the **CEO** the **confirmed** Environmental Management Plan if there is a material risk that the outcomes or objectives it is required to achieve will not be complied with, including but not limited to as a result of a change to the **proposal**.

C2-3 Despite condition C2-1, but subject to conditions C2-4 and C2-5, the proponent may implement minor revisions to an environmental management plan if the revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the achievement of the limits, outcomes or objectives which the environmental management plan is required to achieve.

C2-4 If the proponent is to implement minor revisions to an environmental management plan under condition C2-3, the proponent must provide the **CEO** with the following at least twenty (20) business days before it implements the revisions:

- (1) the revised environmental management plan clearly showing the minor revisions;
- (2) an explanation of and justification for the minor revisions; and
- (3) an explanation of why the minor revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the

achievement of the limits, outcomes or objectives which the environmental management plan is required to achieve.

C2-5 The proponent must cease to implement any revisions which the **CEO** notifies the proponent (at any time) in writing may not be implemented.

C2-6 **Confirmed** environmental management plans, and any revised environmental management plans under condition C2-4(1), must be published on the proponent's website and provided to the **CEO** in electronic form suitable for on-line publication by the Department of Water and Environmental Regulation within twenty (20) business days of being implemented, or being required to be implemented (whichever is earlier).

C3 Conditions Related to Monitoring

C3-1 The proponent must undertake monitoring capable of:

- (1) substantiating whether the **proposal** limitations and extents in Part A are exceeded; and
- (2) **detecting** and substantiating whether the environmental outcomes identified in Part B are achieved (excluding any environmental outcomes in Part B where an environmental management plan is expressly required to monitor achievement of that outcome).

C3-2 The proponent must submit as part of the Compliance Assessment Report required by condition D2, a compliance monitoring report that:

- (1) outlines the monitoring that was undertaken during the implementation of the **proposal**;
- (2) identifies why the monitoring was capable of substantiating whether the **proposal** limitation and extents in Part A are exceeded;
- (3) for any environmental **outcomes** to which condition C3-1(2) applies, identifies why the monitoring was scientifically robust and capable of **detecting** whether the environmental **outcomes** in Part B are met;
- (4) outlines the results of the monitoring;
- (5) reports whether the **proposal** limitations and extents in Part A were exceeded and (for any environmental outcomes to which condition C3-1 (2) applies) whether the environmental **outcomes** in Part B were achieved, based on analysis of the results of the monitoring; and
- (6) reports any actions taken by the proponent to remediate any potential non-compliance.

C4 Environmental Management Plans: Conditions Relating to Monitoring and Adaptive Management for Outcomes Based Conditions

C4-1 The environmental management plans required under conditions B1-6, B3-3, B3-4, B3-5, B6-5 and B7-2 must contain provisions which enable the substantiation of whether the relevant outcomes of those conditions are met, and must include:

- (1) **threshold criteria** that provide a limit beyond which the environmental outcomes are not achieved;
- (2) **trigger criteria** that will provide an early warning that the environmental outcomes are not likely to be met;
- (3) monitoring parameters, sites, control/reference sites, methodology, timing and frequencies which will be used to measure **threshold criteria** and **trigger criteria**. Include methodology for determining alternate monitoring sites as a contingency if proposed sites are not suitable in the future;
- (4) baseline data;
- (5) data collection and analysis methodologies;
- (6) adaptive management methodology;
- (7) **contingency measures** which will be implemented if **threshold criteria** or **trigger criteria** are not met; and
- (8) reporting requirements.

C4-2 Without limiting condition C3-1, failure to achieve an environmental outcome, or the exceedance of a **threshold criteria**, regardless of whether threshold **contingency measures** have been or are being implemented, represents a non-compliance with these conditions.

C5 Environmental Management Plans: Conditions Related to Management Actions and Targets for Objective Based Conditions

C5-1 The environmental management plan required under condition B1-6 must contain provisions which enable the achievement of the relevant objectives of those conditions and substantiation of whether the objectives are reasonably likely to be met, and must include:

- (1) **management actions**;
- (2) **management targets**;
- (3) **contingency measures** if **management targets** are not met; and

(4) reporting requirements.

C5-2 Without limiting condition C2-1, the failure to achieve an environmental objective, or implement a **management action**, regardless of whether **contingency measures** have been or are being implemented, represents a non-compliance with these conditions.

PART D – COMPLIANCE, TIME LIMITS, AUDITS AND OTHER CONDITIONS

D1 Non-compliance Reporting

D1-1 If the proponent becomes aware of a potential non-compliance, the proponent must:

- (1) report this to the **CEO** within seven (7) days;
- (2) implement **contingency measures**;
- (3) investigate the cause;
- (4) investigate environmental impacts;
- (5) advise rectification measures to be implemented;
- (6) advise any other measures to be implemented to ensure no further impact;
- (7) advise timeframe in which contingency, rectification and other measures have and/or will be implemented; and
- (8) provide a report to the **CEO** within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(7) above.

D1-2 Failure to comply with the requirements of a condition, or with the content of an environmental management plan required under a condition, constitutes a non-compliance with these conditions, regardless of whether the **contingency measures**, rectification or other measures in condition D1-1 above have been or are being implemented.

D2 Compliance Reporting

D2-1 The proponent must provide an annual Compliance Assessment Report to the **CEO** for the purpose of determining whether the implementation conditions are being complied with.

D2-2 Unless a different date or frequency is approved by the **CEO**, the first annual Compliance Assessment Report must be submitted within fifteen (15) months of the date of this Statement, and subsequent reports must be submitted annually from that date.

D2-3 Each annual Compliance Assessment Report must be endorsed by the proponent's Chief Executive Officer, or a person approved by proponent's Chief Executive Officer to be delegated to sign on the Chief Executive Officer's behalf.

D2-4 Each annual Compliance Assessment Report must:

- (1) state whether each condition of this Statement has been complied with, including:
 - (a) exceedance of any **proposal** limits and extents;
 - (b) achievement of environmental outcomes;
 - (c) achievement of environmental objectives;
 - (d) requirements to implement the content of environmental management plans;
 - (e) monitoring requirements;
 - (f) implement **contingency measures**;
 - (g) requirements to implement adaptive management; and
 - (h) reporting requirements;
- (2) include the results of any monitoring (inclusive of any raw data) that has been required under Part C in order to demonstrate that the limits in Part A, and any outcomes or any objectives are being met;
- (3) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;
- (4) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;
- (5) be provided in a form suitable for publication on the proponent's website and online by the Department of Water and Environmental Regulation; and
- (6) be prepared and published consistent with the latest version of the Compliance Assessment Plan required by condition D2-5 which the **CEO** has **confirmed** by notice in writing satisfies the relevant requirements of Part C and Part D.

D2-5 The proponent must prepare a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition D2-2, or prior to implementation of the **proposal**, whichever is sooner.

D2-6 The Compliance Assessment Plan must include:

- (1) what, when and how information will be collected and recorded to assess compliance;
- (2) the methods which will be used to assess compliance;

- (3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;
- (4) the retention of compliance assessments;
- (5) the table of contents of Compliance Assessment Reports, including audit tables; and
- (6) how and when Compliance Assessment Reports will be made publicly available, including usually being published on the proponent's website within sixty (60) days of being provided to the **CEO**.

D3 Contact Details

- D3-1 The proponent must notify the **CEO** of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

D4 Time Limit for Proposal Implementation

- D4-1 The **proposal** must be **substantially commenced** within five (5) years from the date of this Statement.
- D4-2 The proponent must provide to the **CEO** documentary evidence demonstrating that they have complied with condition D4-1 no later than thirty (30) days after **substantial commencement**.
- D4-3 If the **proposal** has not been **substantially commenced** within the period specified in condition D4-1, implementation of the **proposal** must not be commenced or continued after the expiration of that period.

D5 Public Availability of Data

- D5-1 Subject to condition D5-2, within a reasonable time period approved by the **CEO** upon the issue of this Statement and for the remainder of the life of the proposal, the proponent must make publicly available, in a manner approved by the **CEO**, all validated environmental data collected before and after the date of this Statement relevant to the **proposal** (including sampling design, sampling methodologies, monitoring and other empirical data and derived information products (e.g. maps)), environmental management plans and reports relevant to the assessment of this **proposal** and implementation of this Statement.

D5-2 If:

- (1) any data referred to in condition D5-1 contains trade secrets; or
- (2) any data referred to in condition D5-1 contains particulars of confidential information (other than trade secrets) that has commercial value to a person that would be, or could reasonably be expected to be, destroyed or diminished if the confidential information were published,

the proponent may submit a request for approval from the **CEO** to not make this data publicly available and the **CEO** may agree to such a request if the **CEO** is satisfied that the data meets the above criteria.

D5-3 In making such a request the proponent must provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

D6 Independent Audit

D6-1 The proponent must arrange for an independent audit of compliance with the conditions of this statement, including achievement of the environmental outcomes and/or the environmental objectives and/ or environmental performance with the conditions of this statement, as and when directed by the **CEO**.

D6-2 The independent audit must be carried out by a person with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition D6-1.

D6-3 The proponent must submit the independent audit report with the Compliance Assessment Report required by condition D2, or at any time as and when directed in writing by the **CEO**. The audit report is to be supported by credible evidence to substantiate its findings.

D6-4 The independent audit report required by condition D6-1 is to be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

Table 1: Abbreviations and definitions

Acronym or abbreviation	Definition or term
Adverse impact(s)	Negative change that is neither trivial nor negligible that could result in a reduction in health, diversity or abundance of the receptor/s being impacted, or a reduction in environmental value. Adverse impacts can arise from direct or indirect impacts, or other impacts from the proposal .
Aboriginal cultural heritage	Means the tangible and intangible elements that are important to the Aboriginal people of the state, and are recognised through social, spiritual, historical, scientific or aesthetic values, as part of Aboriginal tradition to the extent they directly affect or are affected by physical or biological surroundings.
Aboriginal cultural heritage site(s)	A place which has Aboriginal cultural heritage which is subject to a WA law, and/or has been newly identified within a survey, study, report, (or similar), and/or is lodged under a WA law but not yet registered, relating specifically to Aboriginal heritage from time to time.
Bat deflectors	Suitable design, feature or modification to barbed wire fencing to increase its visibility and reduce bat collision and entanglement.
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <i>Environmental Protection Act 1986</i> , or the CEO's delegate.
Clearing / clearing activities	Has the same meaning as in section 51A of the <i>Environmental Protection Act 1986</i> .
Conceptual footprint	Refers to the current indicative layout of the direct disturbance footprint of the proposal , which includes key elements such as mine pits and waste rock landforms, as well as infrastructure.
Confirmed	In relation to a plan required to be made and submitted to the CEO , means, at the relevant time, the plan that the CEO confirmed , by notice in writing, meets the requirements of the relevant condition. In relation to a plan required to be implemented without the need to be first submitted to the CEO , means that plan until it is revised, and then means, at the relevant time, the plan that the CEO confirmed , by notice in writing, meets the requirements of the relevant condition.
Contingency measures	Planned actions for implementation if it is identified that an environmental outcome, environmental objective, threshold criteria, or management target are likely to be, or are being, exceeded. Contingency measures include changes to operations or reductions in disturbance or adverse impacts to reduce impacts and must be decisive actions that will quickly bring the impact to below any relevant threshold, management target

	and to ensure that the environmental outcome and/or objective can be met.
Construction	Activities that are associated with the substantial implementation of a proposal including but not limited to, earthmoving, vegetation clearing , grading or construction of right of way. Construction activities do not include Geotechnical investigations (including potholing for services and the installation of piezometers) and other preconstruction activities where no clearing of vegetation is required.
CPI	The All Groups Consumer Price Index numbers for Perth compiled and published by the Australian Bureau of Statistics.
Critical habitat	Refers to gorge/gully and breakaway/cliff habitats shown in Figure 6.
DBCA	Means the Department responsible for administration of the <i>Biodiversity Conservation Act 2016</i> which at the time of writing is the Department of Biodiversity, Conservation and Attractions (DBCA).
Development envelope	Area in which the new mine and existing areas and associated facilities of the proposal are located. All direct impacts associated with the proposal will be contained within the development envelope .
Detect / detecting	The smallest statistically discernible effect size that can be achieved with a monitoring strategy designed to achieve a statistical power value or measure of at least 0.8 or an alternative value as determined by the CEO .
Disturb / disturbing / disturbance	Means directly has or materially contributes to the disturbance effect on health, diversity or abundance of the receptor/s being impacted or on an environmental value. In relation to flora, vegetation or fauna habitat, includes to result in the death, destruction, removal, severing or doing substantial damage to In relation to fauna, includes to have the effect of altering the natural behaviour of fauna to its detriment.
EMP	Environmental Management Plan.
Environmental value	A beneficial use, or ecosystem health condition.
Environmental harm	Has the meaning provided by section 3A(2) of the <i>Environmental Protection Act 1986</i> .
Ethel Gorge TEC	The Ethel Gorge aquifer stygobiont community known from the Ethel Gorge (Ophthalmia Basin) alluvium calcrete aquifer on the Fortescue River in the vicinity of the town of Newman, listed as threatened under the <i>Biodiversity Conservation Act 2016</i> .
Fauna handler	A person who is qualified and has attained the appropriate licence/s and authorisation/s under section 40 of the <i>Biodiversity Conservation Act 2016</i> and the Biodiversity Conservation Regulations 2018.

Fauna spotter	A person who is suitably trained in species identification, who does not perform any handling of animals where a licence to do so is required.
GL/a	Gigalitres per annum
‘Good’ to ‘Excellent’ condition native vegetation	Means vegetation that has been rated ‘good’, ‘excellent’ or any value between these ratings, in accordance with the Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016) including any revision to this technical guidance.
Gorge/gully habitat	The area defined as the habitat type “gorge/gully” in the report and supporting spatial data in the Jimblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document (BHP 2025) (Figure 9-3 and 9-4).
Greenhouse gas emissions	Greenhouse gas emissions expressed as tonnes of carbon dioxide equivalent (CO ₂ -e) as calculated in accordance with the definition of ‘carbon dioxide equivalence in Section 7 of the National Greenhouse and Energy Reporting Act 2007 (Cth) or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.
Ground disturbing activities	Any activity or activities undertaken in the implementation of the proposal , including any clearing , civil works or construction .
Ha	Hectare
Hillcrest/hillslope habitat	The area defined as the habitat type “hillcrest/hillslope” in the report and supporting spatial data in the Jimblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document (BHP 2025) (Figures 9-3 and 9-4).
IBRA	Interim Biogeographic Regionalisation for Australia.
Integrated waste landforms	The integrated waste landform is the incorporation of disposal of tailings material within the waste landform resulting in a single landform.
km	kilometre
km/hr	Kilometre(s) per hour.
Local provenance	Refers to the Hamersley and Fortescue IBRA subregions as delineated by the PIL03 of Interim Biogeographic Regionalisation for Australia, Version 7 (DCCEEW).
m	Metres
Major Drainage Line	The area defined as the habitat type “major drainage line” in the report and supporting spatial data in the Jimblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document (BHP 2025) (Figures 9-3 and 9-4).
Management action	The identified actions implemented with the intent of achieving the environmental objective.

Management target	A type of indicator to evaluate whether an environmental objective is being achieved.
MAR	Managed aquifer recharge.
Maternity season	Period between 1 October to 31 December for ghost bats (<i>Macroderma gigas</i>) and 1 June to 30 November for grey falcons (<i>Falco hypoleucos</i>).
Mining exclusion zones	Mining Exclusion Zones apply within 50 m of individuals of <i>Acacia corusca</i> (P1) for the proposal and to within 300 m for the significant amendment, as shown in Figures 4a and 4b. Mining Exclusion Zones apply to within 50 m and 100 m of ghost bat category 3 and 4 caves, as shown in Figure 8.
Objectives	An objective is the proposal -specific desired state for an environmental factor(s) to be achieved from the implementation of management actions.
Operations / Commencement of operations	Operation of the plant infrastructure for the proposal and includes pre-commissioning, commissioning, start-up and operation of the plant infrastructure for the proposal .
Outcomes	A proposal-specific result to be achieved when implementing the proposal .
Pilbara Environmental Offsets	A special purpose account created pursuant to section 16(1)(d) of the Financial Management Act 2006 by the Department of Water and Environmental Regulation.
Pre-clearance survey(s)	Surveys designed to identify the presence or evidence of threatened and priority flora and fauna species listed under the <i>Biodiversity Conservation Act 2016</i> prior to ground disturbing activities in accordance with the relevant EPA Guidance.
Pre-clearance inspection(s)	Means a search of immediate impact areas prior to clearing to locate fauna. The pre-clearance inspections should focus on locating nests, burrows, recent foraging signs, fresh tracks and scats. Refer to DBCA guidelines.
Priority flora	Flora listed as priority by DBCA .
Progressive manner	In relation to rehabilitation , the stage treatment of disturbed areas during exploration, construction , development and mining operation as soon as these areas become available.
Proposal	The proposal is the entire proposal , which includes the existing approved proposal , plus the expansion (significant amendment).
Pollution	Has the meaning provided by section 3A(1) of the <i>Environmental Protection Act 1986</i> .
Reasonable steps to consult	Reasonable steps to consult as described in the <i>Technical Guideline Environmental Impact Assessment of Social</i>

	<i>Surroundings- Aboriginal cultural heritage</i> (EPA, November 2023) and any subsequent revisions.
Rehabilitation	A process which aims to maximise the return of biodiversity to disturbed land by reinstating self-sustaining and functional ecosystems based on local species.
Relevant Traditional Owners	In relation to the land subject to the proposal , means one or more of the following: • a registered native title body corporate for the land; or • a registered native title claimant for the land; or • a group of persons with Aboriginal traditional and cultural associations with the land.
Riparian vegetation	Vegetation type identified as MA EcrEv AciApypMg CcEuaTt in Table 8-3 of the Jumblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document – referral supplementary report (BHP 2025).
Self-sustaining	Vegetation that can survive without intervention such as water or maintenance. A self-sustaining ecosystem has the potential to persist indefinitely under existing environmental conditions, but its composition, structure and function may fluctuate in response to periodic stress or disturbance or may evolve as environmental conditions change (adapted from SER 2004).
Substantially commenced/ substantial commencement	Substantial commencement is more than the preparatory works for a proposal and generally includes ground disturbance activities which are solely attributed to proposal elements described in the proposal content document, and a substantial portion of the total disturbance and infrastructure works physically commenced.
Supporting habitat	Fauna habitat mapped as sand plain and mulga woodland habitats for greater bilby (<i>Macrotis lagotis</i>). Fauna habitat mapped as major drainage line, minor drainage line, hillcrest/hillslope and stony plain habitats for northern quoll (<i>Dasyurus hallucatus</i>). Fauna habitat mapped as drainage area/floodplain, major drainage line, minor drainage line, breakaway/cliff, hillcrest/hillslope, gorge/gully, mulga woodland, sand plain and stony plain habitats for ghost bat (<i>Macroderma gigas</i>). Fauna habitat mapped as hillcrest/hillslope, gorge/gully, major drainage line and breakaway/cliff habitats for Pilbara olive python (<i>Liasis olivaceus barroni</i>).
Safeguard Legislation	The Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i> and associated <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i> .
Significant amendment	Is the expansion of the approved proposal as described and documented in Table 2 of the proponents Proposal Content Document dated 15 (December 2023).

Trigger criteria	Indicators that have been selected for monitoring to provide a warning that, if exceeded, the environmental outcome may not be achieved. They are intended to forewarn of the approach of the threshold criteria and trigger response actions.
Threatened fauna	Fauna listed as threatened under the <i>Biodiversity Conservation Act 2016</i> or the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Threshold criteria	The indicators that have been selected to represent limits of impact beyond which the environmental outcome is not being met.
Viability	In relation to flora, where there is evidence of seed germination and growth, and the population remains within natural variation.

Figures (attached)

- Figure 1 Jimblebar Hub Significant Amendment
- Figure 2 Jimblebar Hub - approved proposals
- Figure 3 Jimblebar Hub Proposal Assessment Area
- Figure 4a *Acacia corusca*, and related Mining Exclusion Zone for the significant amendment
- Figure 4b *Acacia corusca*, and related Mining Exclusion Zone for the approved proposal
- Figure 5 Pre-clearance priority flora survey areas
- Figure 6 Fauna habitats within the development envelope
- Figure 7 Impacted ghost bat cave (CJIM-04) within the development
- Figure 8 Ghost bat Mining Exclusion Zones

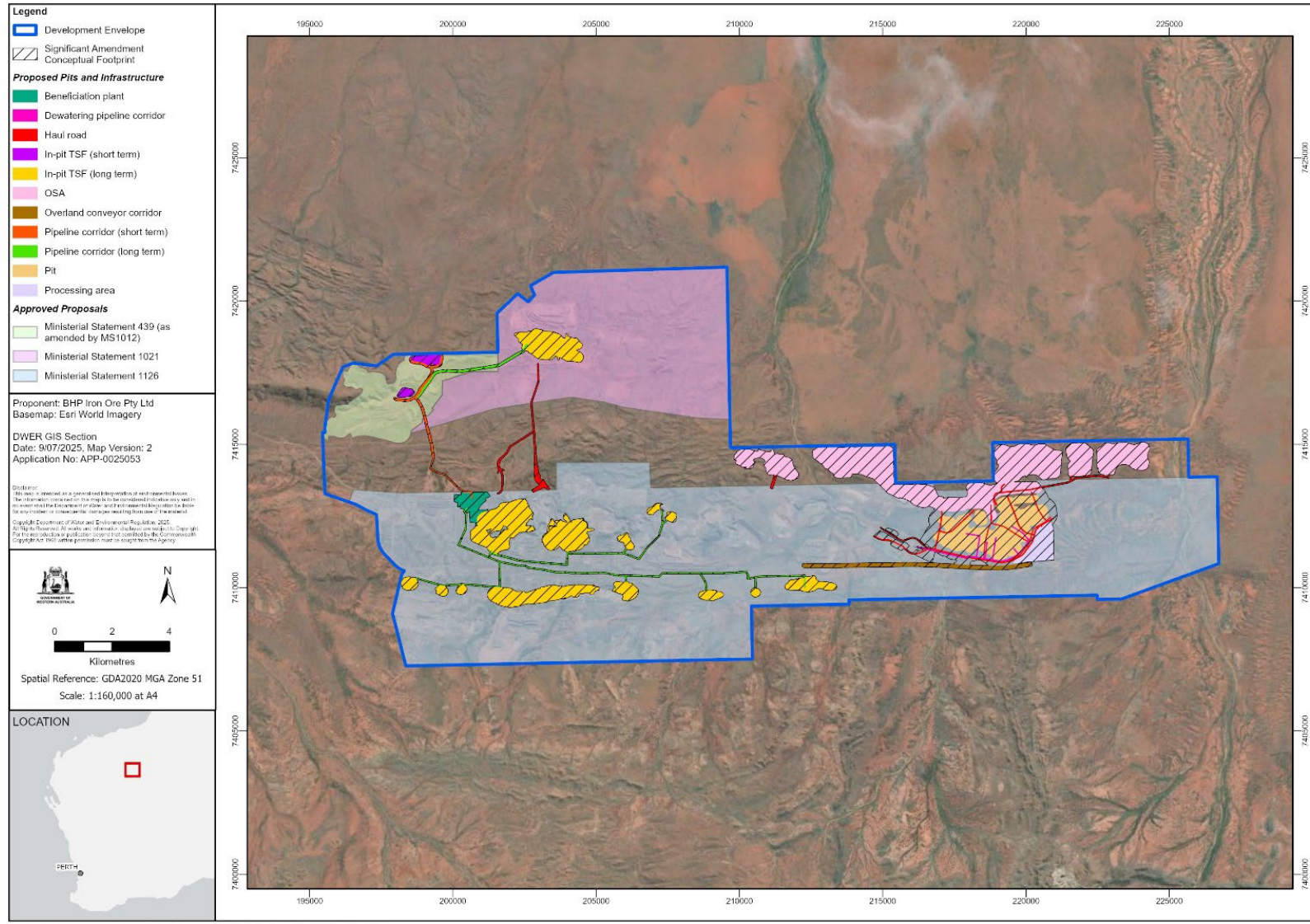


Figure 1: Jimblebar Hub Significant Amendment

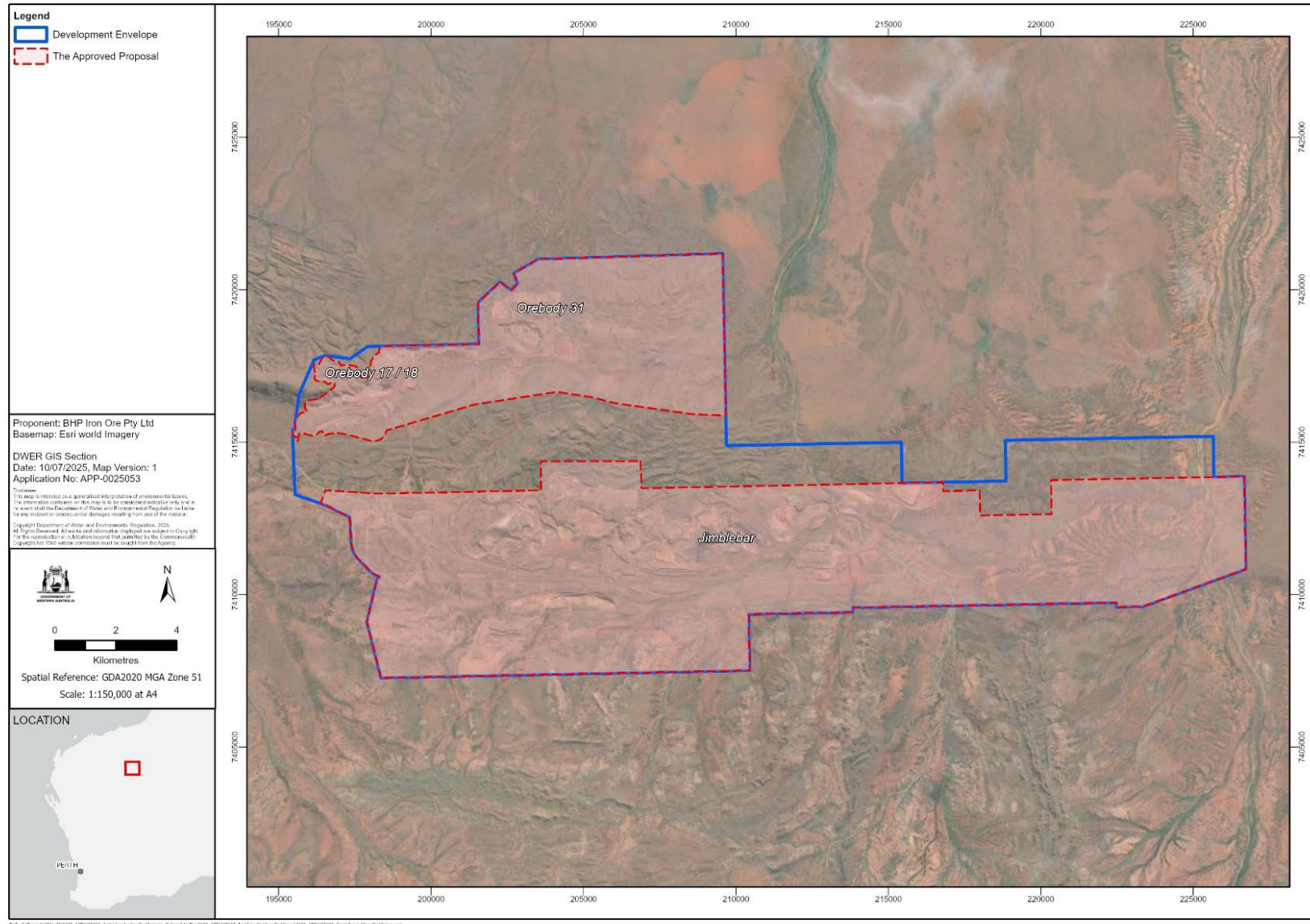


Figure 2: Jimblebar Hub - approved proposals

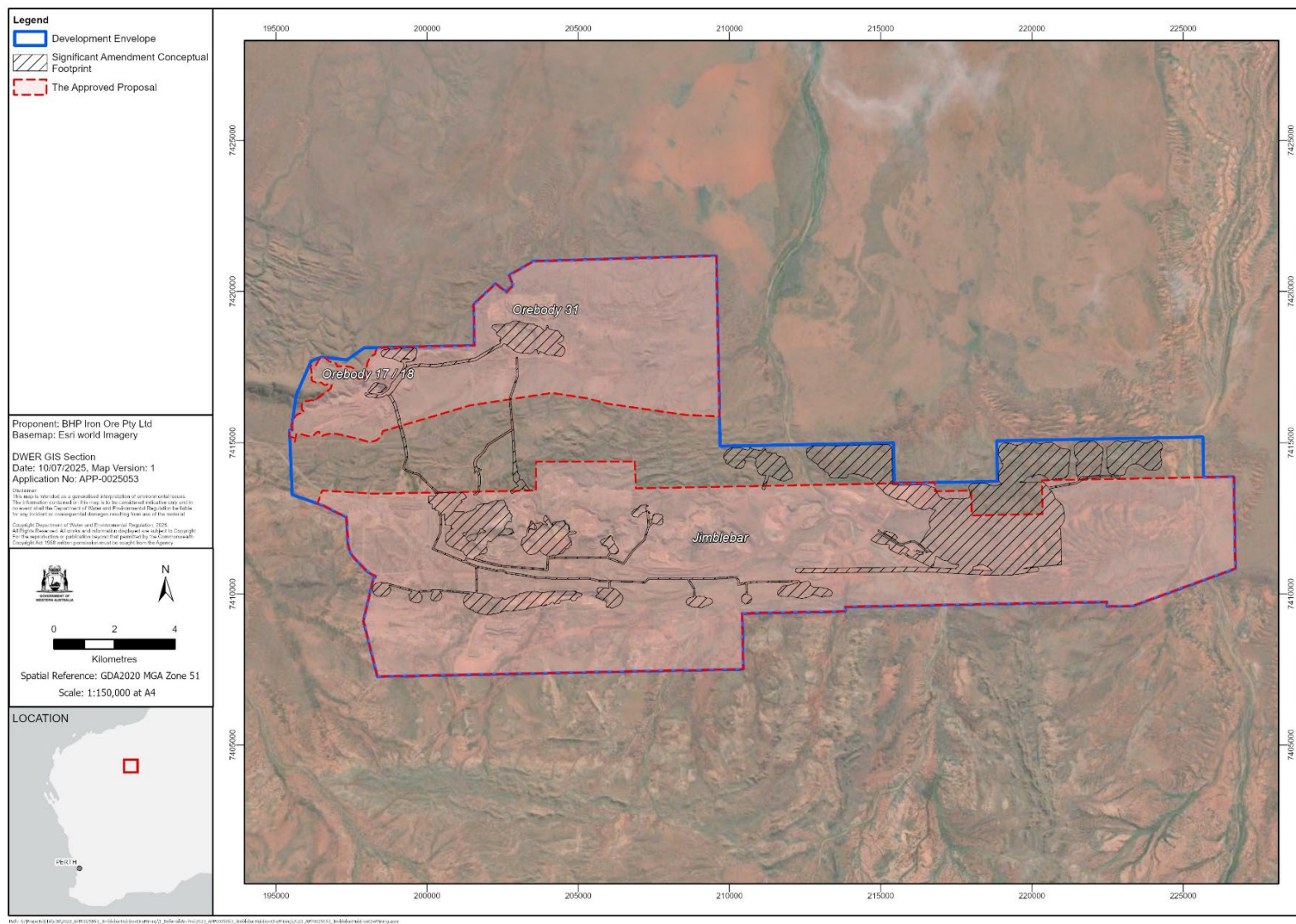


Figure 3: Jimblebar Hub Proposal Assessment Area

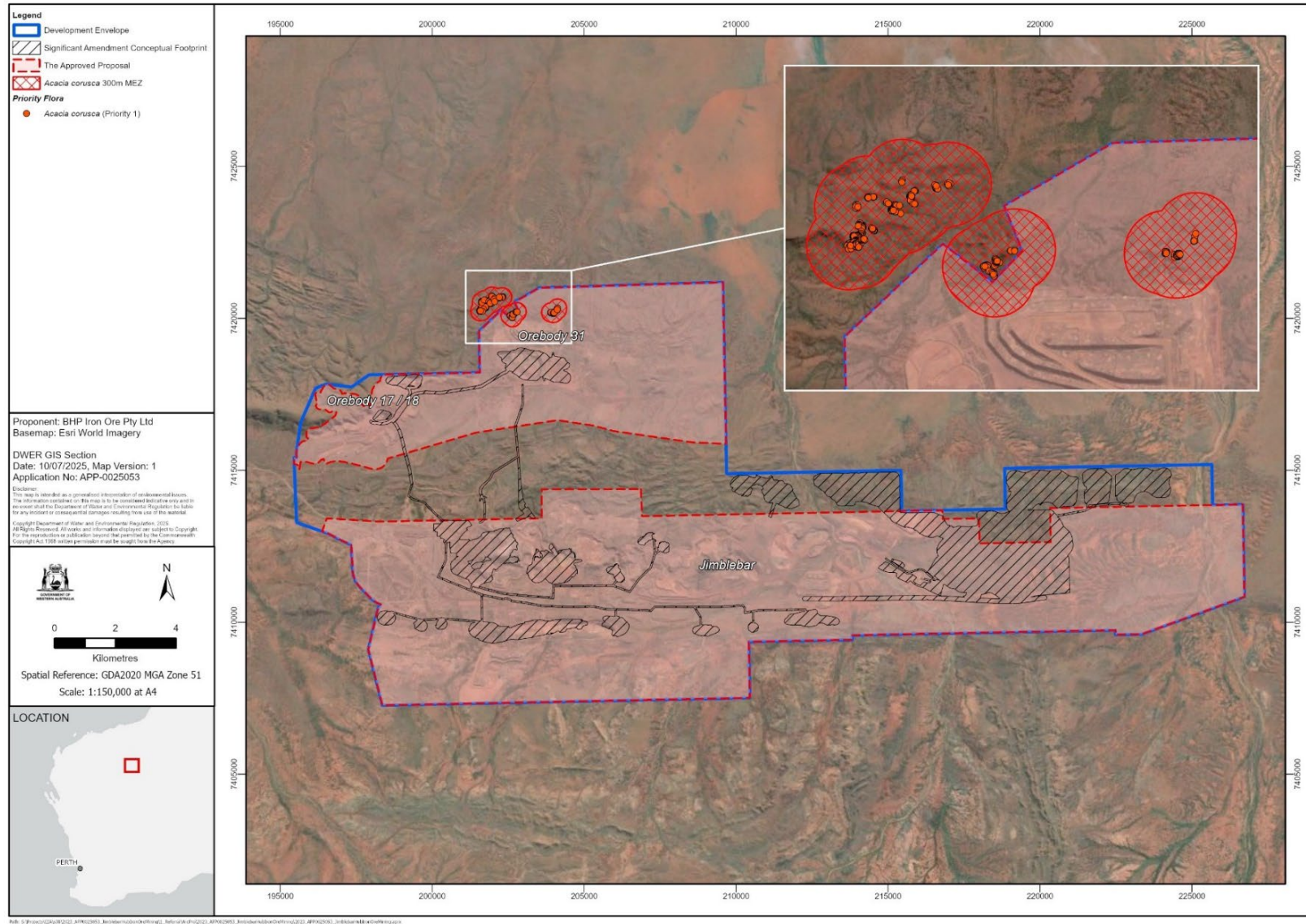


Figure 4a: *Acacia corusca*, and related Mining Exclusion Zone for the significant amendment

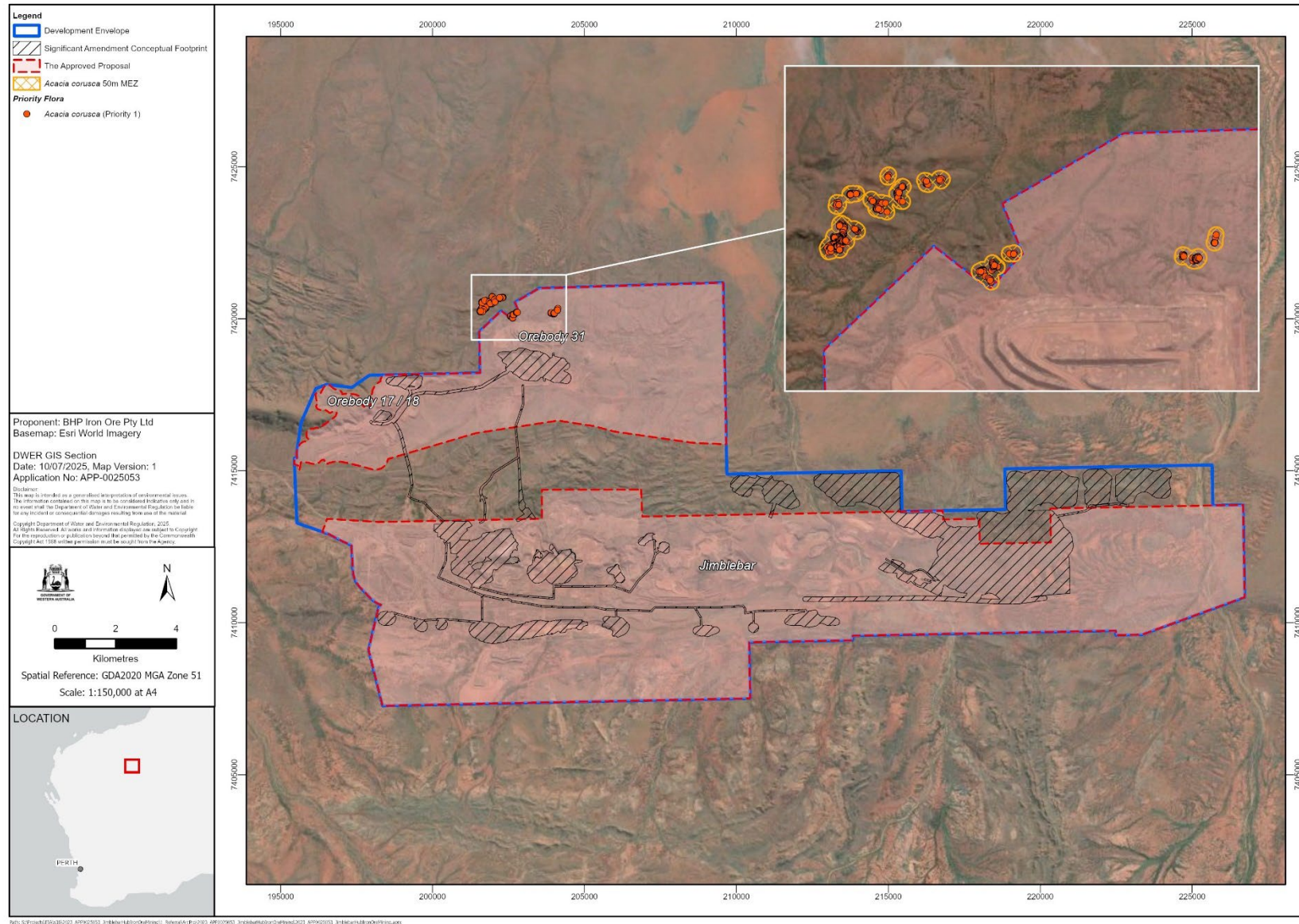
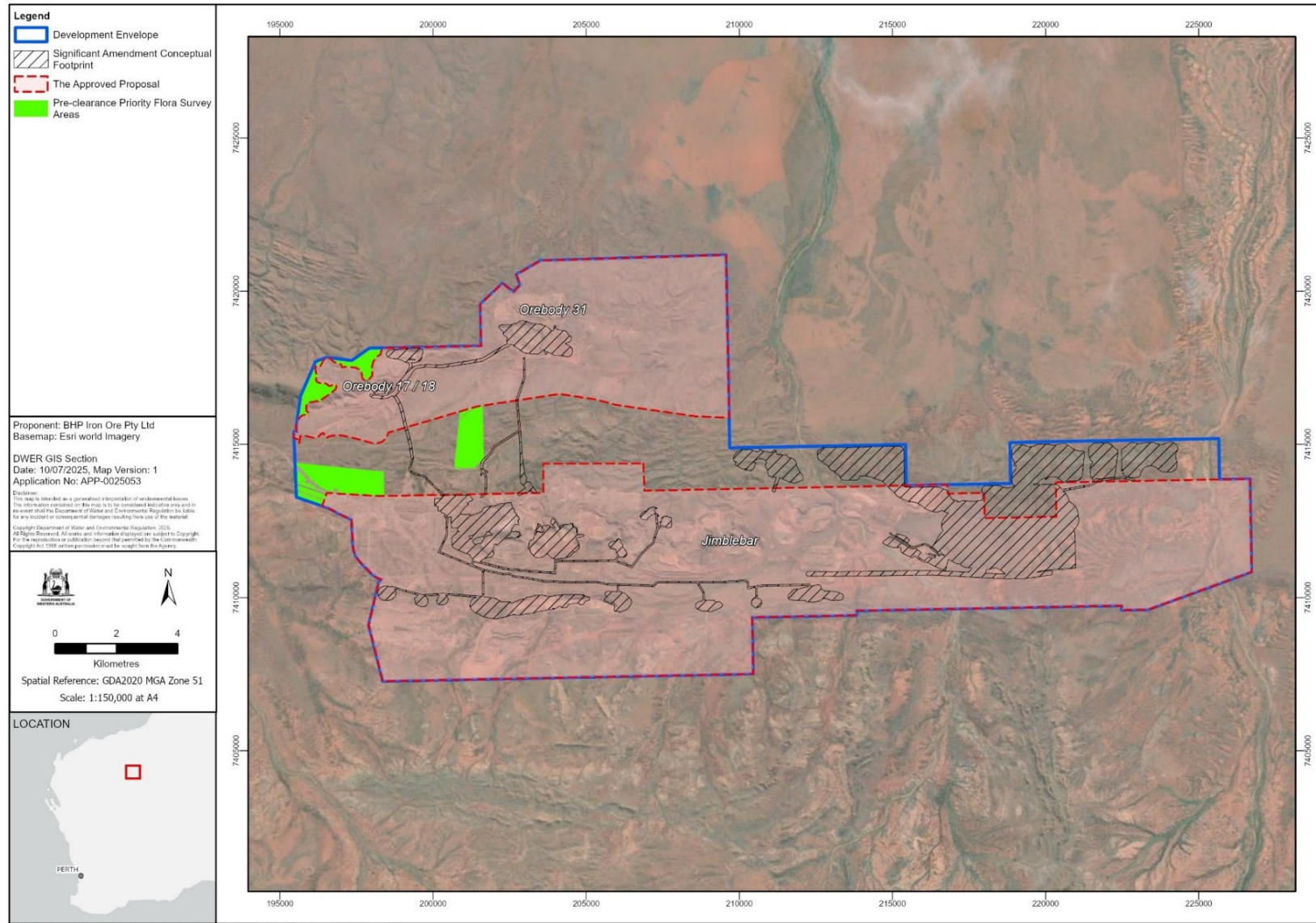


Figure 4b: *Acacia corusca*, and related Mining Exclusion Zone for the approved proposal



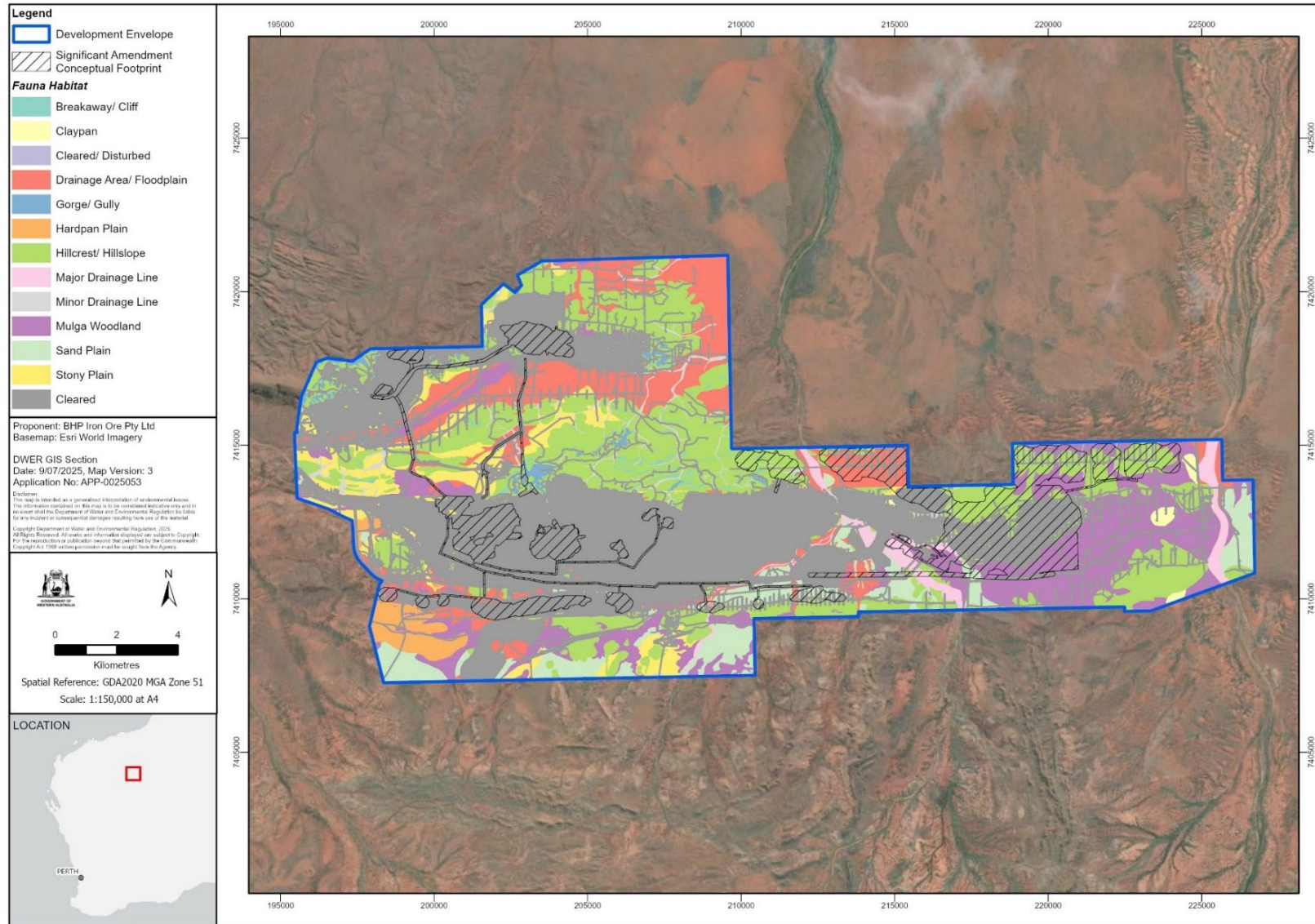


Figure 6: Fauna habitats within the development envelope

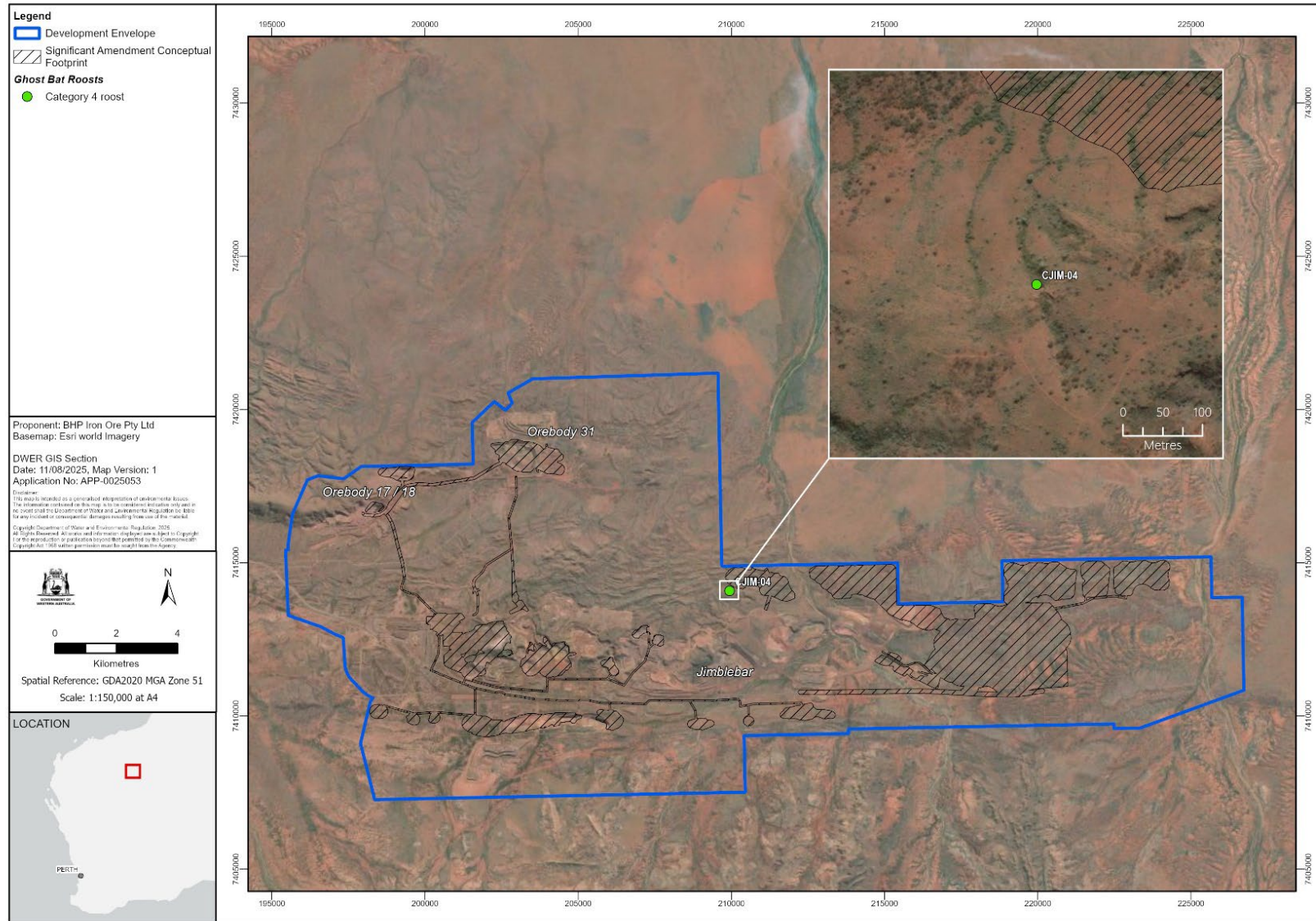


Figure 7: Impacted ghost bat cave (CJIM-04) within the development envelope

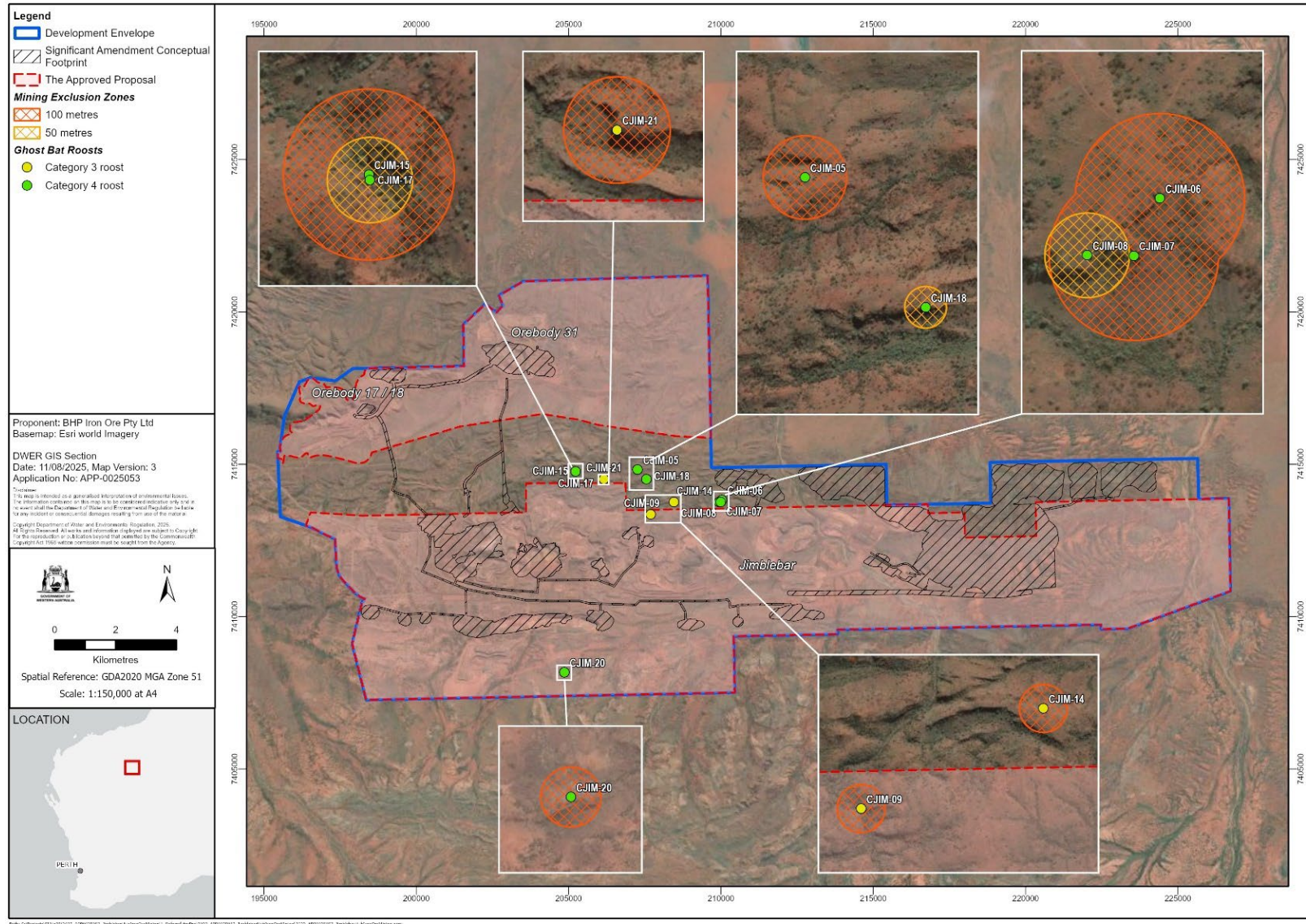


Figure 8: Ghost bat Mining Exclusion Zones

Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 51 (MGA Zone 51), datum of Geocentric Datum of Australia 2020 (GDA20).

Spatial data depicting the figures are held by the Department of Water and Environmental regulation. Record no. DWERDT1199040.

Appendix B: Decision-making authorities

Table B1: Identified relevant decision-making authorities for the proposal

Decision-Making Authority	Legislation (and approval)
1. Minister for Aboriginal Affairs	<i>Aboriginal Heritage Act 1972</i> - section 18 consent to impact a registered Aboriginal heritage site)
2. Minister for Environment	<i>Biodiversity Conservation Act 2016</i> - section 40 authority to take or disturb threatened species and <i>Contaminated Sites Act 2003</i> - section 58 disturbance of contaminated sites
3. Minister for Mines and Petroleum	<i>Mining Act 1978</i> - granting of mining lease/exploration permits/ general purpose lease
4. Minister for State Development	State Agreement Act <i>Iron Ore (Mount Newman) Agreement Act 1964</i> <i>Iron Ore (McCamey's Monster) Agreement Authorisation Act 1972</i>
5. Minister for Water	<i>Rights in Water and Irrigation Act 1914</i> - section 17 permit to interfere with beds and banks - section 5C licence to take water - groundwater abstraction licence - section 26D licence to construct or alter bores - dewatering licence
6. Chief Executive Officer, Department of Biodiversity, Conservation and Attractions	<i>Biodiversity Conservation Act 2016</i> - authority to take flora and fauna (other than threatened species)
7. Chief Dangerous Goods Officer Department of Mines, Petroleum and Exploration	<i>Dangerous Goods Safety Act 2004</i> - storage and handling of dangerous goods
8. Executive Director Resource and Environmental Compliance, Department of Mines, Petroleum and Exploration	<i>Mining Act 1978</i> - mining proposal
9. Department of Mines, Petroleum and Exploration	<i>Mining Act 1978</i> - miscellaneous license
10. State Mining Engineer,	<i>Work Health and Safety Act 2020</i>

Decision-Making Authority	Legislation (and approval)
11. Department of Mines, Petroleum and Exploration	- mine safety - approval to commence mining operations
12. Chief Executive Officer, Department of Water and Environmental Regulation	<i>Environmental Protection Act 1986</i> - part V works approval and licence - part V clearing permit - approval for noise management plans for construction outside of prescribed hours - part IV compliance (Ministerial Statements)
13. Chief Executive Officer Shire of East Pilbara	<i>Local Government Act 1995</i> - development approval and scheme amendment <i>Health Act 1911</i> - permit for treatment of sewage <i>Health Act 1911 and Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulation 1974</i> <i>Building Act 2011</i> - permit for worker accommodation <i>Planning and Development Act 2005 (and relevant local By Law)</i> - building permit for worker accommodation

Appendix C: Environmental Protection Act principles

Table C1: Consideration of principles of the *Environmental Protection Act 1986*

EP Act principle	Consideration
1. The precautionary principle <i>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by –</i> (a) <i>careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and</i> (b) <i>an assessment of the risk-weighted consequences of various options.</i>	The EPA has considered the precautionary principle in its assessment of all key environmental factors. The EPA considered the proponents avoidance and minimisation measures for conservation significant flora and vegetation and fauna. Where the EPA considered there was uncertainty due to insufficient surveys and investigations, the EPA has recommended strong conditions requiring the proponent to undertake pre-clearance surveys, investigations, monitoring and avoidance of adverse impacts. Particular factors the precautionary principle was applied to in this assessment were flora and vegetation, terrestrial fauna, subterranean fauna, inland waters, social surroundings and greenhouse gas emissions. For flora and vegetation, the EPA has considered the gaps in survey coverage for the proposal. The EPA has determined it could proceed with its assessment despite this deficiency as the EPA is of the view that with strong recommended conditions (such as requiring preclearance surveys in conditions B1-3), the available information is sufficient to proceed with assessment of the proposal, and adequate for decision-making purposes. The EPA notes that the proponent has identified measures to avoid potential serious or irreversible damage to the environment including: • avoidance of <i>Acacia corusca</i> (P1) individuals • implementing a 100 m exclusion buffer around category 3 ghost bat roosts within the proposed development envelope • using existing infrastructure where possible to minimise clearing of native vegetation • undertake progressive rehabilitation where practicable.
2. The principle of intergenerational equity	The EPA has considered the principle of intergenerational equity in its assessment and has had particular regard to this principle in its assessment of flora and

EP Act principle	Consideration
<i>The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.</i>	vegetation, terrestrial fauna, subterranean fauna, inland waters, social surroundings and greenhouse gas. The EPA is of the view that consistency with this principle could be achieved with the implementation of its recommended conditions, which requires the proponent to: • not disturb Aboriginal cultural heritage sites in the development envelope, unless consent is granted to disturb that site under the AH Act and has involved informed consultation with the Nyiyaparli people • develop and implement a greenhouse gas management plan and requiring the proponent to demonstrate trajectory to net zero emissions by 2050 through emission reporting • maintain levels of ecological protection within the terrestrial environment such as limits on the extent of disturbance to flora, vegetation, and surface water pools, and management targets to avoid indirect impacts • contribute to the PEOF for future landscape-scale environmental offset projects, to counterbalance the significant residual impact to vegetation and threatened fauna habitats within the Pilbara. The EPA has concluded that the environmental values will be protected, and the health, diversity and productivity of the environment will be maintained for the benefit of future generations. <u>Greenhouse gas emissions</u> The EPA has noted that GHG emissions pose a risk to future generations, however, also notes that the proponent has committed to following a linear trajectory to net zero emissions by 2050 consistent with the Paris Agreement and IPCC 1.5 report, and to use offsets should these targets not be met by continuous improvement. The EPA has recommended conditions to ensure this.
3. The principles of the conservation of biological diversity and ecological integrity <i>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</i>	The EPA has considered the principle of conservation of biological diversity and ecological integrity in its assessment and has had particular regard to this principle in its assessment of flora and vegetation, and terrestrial fauna and subterranean fauna. <u>Flora and vegetation, terrestrial fauna, subterranean fauna, and inland waters</u> The EPA has considered to what extent the potential impacts from the proposal to flora and vegetation and terrestrial fauna can be ameliorated to ensure

EP Act principle	Consideration
	consistency with the principle of conservation of biological diversity and ecological integrity, including by provision of offsets. The EPA has recommended: • implementation of a 300 m buffer zone around <i>Acacia corusca</i> records and disturbance limits on <i>Eremophila capricornica</i> • limitations on the area of critical and foraging habitats impacted by the proposal • maintenance of Ethel Gorge stygofauna habitat. The EPA has concluded that given the nature of the impacts, (areas of vegetation and habitat for conservation significant fauna species that will be cleared) that the proposed offsets are likely to counter-balance the impacts of the loss of biological diversity and ecological integrity.
4. Principles relating to improved valuation, pricing and incentive mechanisms ▪ <i>Environmental factors should be included in the valuation of assets and services.</i> ▪ <i>The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.</i> ▪ <i>The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.</i> ▪ <i>Environmental goals, having been established, should be pursued in the most cost-effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.</i>	In considering this principle, the EPA notes that the proponent will bear the costs relating to implementing the proposal to achieve environmental outcomes, and management and monitoring of environmental impacts during construction, operation and decommissioning of the proposal. The EPA has had particular regard to these principles in considering proposal-related impacts to flora and vegetation, terrestrial fauna, inland waters, subterranean fauna, greenhouse gas emissions and social surroundings. The proponent will be responsible for bearing the costs of implementing measures to reduce and offset GHG emissions, including the costs of adopting advances in process management and other measures in the future to further reduce and offset GHG emissions to achieve net zero along a linear trajectory to net zero by 2050.
5. The principle of waste minimisation <i>All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</i>	The EPA has considered the principle of waste minimisation in its assessment and has had particular regard to this principle in its assessment of inland waters and GHG emissions. The EPA notes that the proponent is required to adhere to other statutory processes associated with waste management (such as the Mining Act 1978), and the proponent has stated that waste will be minimised during construction,

EP Act principle	Consideration
	operation and closure by adopting the hierarchy of waste controls: avoid, minimise, reuse, recycle and safe disposal. The conservation of water, including minimising waste, is an important consideration for proponents that hold large water entitlements, and a water conservation/efficiency plan is required to be included in the operating strategies of these proponents. The EPA considers that the water licence granted under the RiWI Act will assist in the achievement of this principle. The EPA notes that the proponent commits to efficiently utilising natural resources such as energy and water and minimise emissions to air including dust pollution and greenhouse gases. The EPA has recommended condition B4 requiring reporting to the CEO if obligations change under the Safeguard Mechanism.

Appendix D: Other environmental factors

Table D1: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Land			
Landforms	Potential impacts include reduced landform diversity and visual amenity of landscape impacts.	<u>Public comments</u> - No public responses were received regarding Landforms. <u>Agency comments</u> - No agency comments were received.	Landforms was not identified as a preliminary key environmental factor when the EPA set the level of assessment. The development envelope is centred around the Brockman and Marra Mamba iron formations. The proposal will result in the modification of the landscape through ore extraction and the construction of waste rock landforms (dumps). The main values that have the potential to be associated with landform have been assessed under flora and vegetation, terrestrial fauna, and social surroundings, and these are likely to meet the EPA objectives. At the end of the assessment, the EPA did not consider landforms to represent significant additional or different the impacts to Flora and Vegetation, Terrestrial Fauna and social surroundings. Accordingly, the EPA did not consider landforms to be a key environmental factor at the conclusion of its assessment. Accordingly, the EPA did not consider landforms to be a key environmental factor at the conclusion of its assessment.
Terrestrial environmental quality	Potential impacts to terrestrial environmental quality include: impacts due to generation of potentially acid forming (PAF) material and drainage from the mine	<u>Public comments</u> No public responses were received regarding Landforms.	Terrestrial environmental quality was not identified as a preliminary key environmental factor when the EPA set the level of assessment. The EPA has recommended condition B3 to ensure there is no adverse impact on water quality within the Ethel Gorge Stygofauna TEC.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
	site at surface water receptors inadequate transport, handling and storage of hydrocarbons and chemicals.	<u>Agency comments</u> There were 5 comments from Department of Mines, Petroleum and Exploration relating to mine closure. These comments related to the tenure on which OSAs are located and the management of tailings.	The EPA considers that PAF risk associated with the proposal is manageable through the recommended condition B6 (Rehabilitation and Closure). Additionally, the EPA considers that the risk of contamination of soils and groundwater from contaminated stormwater, hydrocarbons and chemicals, seepage of leachates, and tailings discharges can be adequately regulated under Part V of the EP Act. Accordingly, the EPA did not consider terrestrial environmental quality to be a key environmental factor at the conclusion of its assessment.
Air			
Air quality	Potential impacts to air quality include: - dust emissions - air emissions from processing.	<u>Public comments</u> - No public responses were received regarding Landforms. <u>Agency comments</u> - No agency comments were received on Air Quality.	Air quality was not identified as a preliminary key environmental factor when the EPA set the level of assessment. The only potential sensitive receptor is the Warrawandu Accommodation Camp, located approximately 7 km east of the Jimblebar Gate House. The EPA considers that risks associated with human health from airborne contaminants can be adequately regulated under the Work Health and Safety Act 2020. While dust impacts are considered for other environmental factors (for example, flora and vegetation, terrestrial fauna and social surroundings), the EPA considers that air quality and dust impacts can be suitably regulated under Part V of the EP Act. Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment. Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment.

Appendix E: Survey, studies and investigations

The EPA advises the following survey, studies and investigations have been used to inform the assessment of the potential impacts to the following environmental factors:

Flora and Vegetation

Appendix 9 of the ERD

- Mesa Gap Corridors Reconnaissance Vegetation and Flora, and Basic Fauna Survey (Astron 2023)
- *Acacia corusca* Targeted Survey and Species Distribution Modelling (Spectrum Ecology 2023)
- *Acacia corusca* Species Distribution Modelling (Spectrum Ecology 2022)
- Jimblebar *Eremophila capricornica* Targeted Flora Survey (Biologic 2021)
- East Jimblebar and Caramulla Detailed Flora and Vegetation Assessment (Biologic 2019)
- Jimblebar North Reconnaissance Flora and Vegetation Survey (Onshore Environmental 2019).

Terrestrial Fauna

Appendix 12 of the ERD

- Mesa Gap Corridors Reconnaissance Vegetation and Flora, and Basic Fauna Survey (Astron 2023)
- Western Ridge and Jimblebar Ghost Bat Monitoring Program: 2021-2022 (Biologic 2023c)
- North Jimblebar Targeted Northern Quoll Assessment (Biologic 2022)
- Jimblebar Greenhouse Gas Abatement Study Basic Vertebrate Fauna Survey (Biologic)
- East Jimblebar and Caramulla Targeted Greater Bilby Survey (GHD 2021a)
- Jimblebar Targeted Ghost Bat Survey (GHD 2021b)
- Caramulla Miscellaneous Licence Level 1 and Targeted Vertebrate Fauna Survey (Biota 2020)
- North Jimblebar Fauna Survey (GHD 2019b)
- East Jimblebar and Caramulla Fauna Survey (GHD 2019a)
- East Jimblebar and Caramulla Short Range Endemic Invertebrate Fauna Survey (Biologic 2020a)

- Jimblebar North (Crowe's Nest) Short range Endemic Invertebrate Fauna Survey (Biologic 2020c)

Not Attached to the ERD

- Eastern Pilbara Ghost Bat Cave Categorisation (Biologic 2023b)

Inland Waters

Appendix 4 of the ERD

- Jimblebar Hub: In-pit tailings storage facility impact assessment (BHP 2025c)
- Jimblebar East: Updated Surface Water Impact Assessment (BHP 2023c)
- Jimblebar Hub: Groundwater Impact Assessment (BHP 2023f)
- Jimblebar Hub: Ophthalmia Dam surplus water impact assessment update (BHP 2023a)
- Jimblebar Hub: PFAS Investigation Summary (BHP 2023d)
- Jimblebar Hydrogeological Assessment (BHP 2023j)
- Eastern Pilbara Hub Water Balance – 2023 Forecast Surplus Discharge Assessment (EMM 2023a)
- Eastern Pilbara Hub Water Balance – OB32 Surplus Water GoldSim Modelling – Stochastic and Sensitivity Assessments (EMM 2023b)
- Second Targeted Site Investigation - Factual Report – Jimblebar Mine Site (ERM 2023)

Appendix 5 of the ERD

- Eastern Pilbara Water Resource Management Plan, Version 8.0 (BHP 2023b)

Appendix 6 of the ERD

- Jimblebar Hub Water Management Plan (BHP 2023i)

Subterranean Fauna

Appendix 3 of the ERD

- East Jimblebar Targeted Troglifauna Survey Report (Bennelongia 2024)

Appendix 14 of the ERD

- East Jimblebar Baseline Subterranean Fauna Survey (Bennelongia 2023)
- East Jimblebar Subterranean Fauna Habitat Modelling ((Biologic 2023a)
- Stygofauna direct toxicity assessment (CRC CARE 2022)
- Eastern Ridge and Jimblebar Stygofauna Monitoring 2020/2021 (Stantec 2022b)
- Eastern Ridge and Jimblebar Stygofauna Monitoring 2021/2022 (Stantec 2022a)
- East Jimblebar Baseline Subterranean Fauna Survey (Bennelongia 2021)

Greenhouse Gas Emissions

Appendix 15 of the ERD

- Review of Jimblebar Hub Greenhouse Gas Management Plan (KPMG 2023)
- 1240: Jimblebar Greenhouse Gas Emissions (Land Clearing) (ETA 2023)

Appendix 16 of the ERD

- Pilbara Regional Greenhouse Gas Management Plan (BHP 2023g)

Appendix F: Relevant policy, guidance, procedures and references

Astron 2023, *Mesa Gap Corridors Reconnaissance Vegetation and Flora, and Basic Fauna Survey*. Unpublished report prepared for BHP, Perth, Western Australia. [Appendix 9 of BHP 2025a].

Bat Call WA 2021, *A review of ghost bat ecology, threats and survey requirements*, Department of Climate Change, Energy, the Environment and Water, Canberra, ACT

Bennelongia 2021, *East Jimblebar Baseline Subterranean Fauna Survey*. Unpublished report prepared for BHP, Perth, Western Australia. [Appendix 14 of BHP 2025a].

Bennelongia 2023, *East Jimblebar Baseline Subterranean Fauna Survey*. Unpublished report prepared for BHP, Perth, Western Australia. [Appendix 14 of BHP 2025b].

BHP 2023a, *Jimblebar Hub: Ophthalmia Dam surplus water impact assessment update*. [Appendix 4 of BHP 2025a].

Bennelongia 2024, *East Jimblebar Targeted Troglifauna Survey Report*. [Appendix 3 of BHP 2025a].

BHP 2023b, *Eastern Pilbara Water Resource Management Plan*. [Appendix 5 of BHP 2025a].

BHP 2023c, *Jimblebar East: Updated Surface Water Impact Assessment*. Perth, Western Australia. [Appendix 4 of BHP 2025a].

BHP 2023d, *Jimblebar Hub PFAS Investigation Summary*. [Appendix 4 of BHP 2025a].

BHP 2023e, *Jimblebar Hub Flora and Vegetation Environmental Management Plan* (Version 1, December 2023). [Appendix 10 of BHP 2025a].

BHP 2023f, *Jimblebar Hub: Groundwater Impact Assessment*. [Appendix 4 of BHP 2025a].

BHP 2023g, *Pilbara Regional Greenhouse Gas Management Plan*. [Appendix 15 of BHP 2025a].

BHP 2023h, *Jimblebar Hub Mine Closure Plan*. Perth, Western Australia. [Appendix 7 of BHP 2025a].

BHP 2023i, *Jimblebar Hub Water Management Plan*. [Appendix 6 of BHP 2025a].

BHP 2023j, *Jimblebar Hydrogeological Assessment*. [Appendix 4 of BHP 2025a].

BHP 2024a, *BHP Iron Ore Annual Environmental Report July 2023 – June 2024*. Perth, Western Australia.

BHP 2024b, *Required Additional Environmental Information, 6 June 2024, 22 August 2024 and 6 September 2024*. Perth, Western Australia.

BHP 2025a, *Jimblebar Hub Iron Ore Mining Operations Significant Amendment Environmental Review Document – referral supplementary report*. Perth, Western Australia.

BHP 2025b, *Jimblebar Hub Significant Amendment: Response to Submissions - May 2025*. Perth, Western Australia.

BHP 2025c, *Jimblebar Hub: In-pit tailings storage facility impact assessment*. Perth, Western Australia. [Appendix 4 of BHP 2025a].

Biologic 2019, *East Jimblebar & Caramulla Detailed Flora and Vegetation Assessment*. Unpublished report prepared for BHP Western Australian Iron Ore. [Appendix 9 of BHP 2025a].

Biologic 2020a, *East Jimblebar and Caramulla Short Range Endemic Invertebrate Fauna Survey*. Unpublished report prepared for BHP. [Appendix 12 of BHP 2025a].

Biologic 2020b, *Jimblebar Greenhouse Gas Abatement Study Basic Vertebrate Fauna Survey*. Unpublished report prepared for BHP. [Appendix 12 of BHP 2025a].

Biologic 2020c, *Jimblebar North (Crowe's Nest) Short Range Endemic Invertebrate Fauna Survey*. Unpublished report prepared for BHP. [Appendix 12 of BHP 2025a].

Biologic 2021, *Jimblebar Eremophila capricornica Targeted Flora Survey*. Unpublished report prepared for BHP WAIO. [Appendix 9 of BHP 2025a].

Biologic 2022, *North Jimblebar Targeted Northern Quoll Assessment*. [Appendix 12 of BHP 2025a].

Biologic 2023a, *East Jimblebar Subterranean Fauna Habitat Modelling*. Unpublished report prepared for BHP, Perth, Western Australia. [Appendix 14 of BHP 2025a].

Biologic 2023b, *Eastern Pilbara Ghost Bat Cave Categorisation*. Unpublished report prepared for BHP.

Biologic 2023c, *Western Ridge and Jimblebar Ghost Bat Monitoring Program: 2021-2022*. [Appendix 12 of BHP 2025a].

Biota 2020, *Caramulla Miscellaneous Licence Level 1 and Targeted Vertebrate Fauna Survey*. Unpublished report prepared for BHP. [Appendix 12 of BHP 2025a].

CRC CARE 2022, *Final report; Stygofauna direct toxicity assessment*. [Appendix 14 of BHP 2025a].

Department of Biodiversity Conservation and Attractions (DBCA) 2023, *Ethel Gorge aquifer stygobiont community: Threatened Ecological Community Fact Sheet*. Government of Western Australia.

Department of Climate Change Energy the Environment and Water (DCCEEW) 2022, *Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2022*. Canberra, ACT.

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Appendix G: List of submitters

7-day comment on referral

Organisations and public

- 2 public submissions were received from individuals.
- 1 public submission were received from an organisation

Public review of proponent information

Government agencies

- Department of Water and Environment Regulation
- Department of Biodiversity Conservation and Attractions
- Department of Mines, Petroleum and Exploration
- Department of Primary Industries and Regional Development.

Appendix H: Assessment timeline

Date	Progress stages	Time (weeks)
14 February 2024	EPA decided to assess – level of assessment set	
6 June 2024	EPA requested additional information	16
18 August 2024	EPA received additional information	10
17 January 2025	EPA accepted additional information	21
24 February 2025	EPA released additional information for public review	5
24 March 2025	Public review period for additional information closed	4
13 August 2025	EPA received final information for assessment	20
21 August 2025	EPA completed its assessment	1
1 October 2025	EPA provided report to the Minister for Environment	6
6 October 2025	EPA report published	3 days
27 October	Appeals period closed	3

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.

Appendix I: Contemporising of Ministerial Statements 1126, 439, 1012 and 1021

The recommended conditions for the significant amendment of the proposal (Jimblebar Hub Significant Amendment) were developed in accordance with section 40AA(3) of the EP Act and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual* (EPA 2021) and includes a review of the following implementation conditions of the approved proposals (Jimblebar Optimisation Project, Orebody 18 Iron Ore Mine and Orebody 31 Iron Ore Mine), which are considered further in Table I1:

Ministerial Statement 1126: Jimblebar Optimisation Project was issued on 17 March 2020 which allowed the mining of orebodies and to undertake associated activities at Jimblebar, located approximately 40 kilometres east of Newman. The Jimblebar Optimisation Project (MS 1126) amended the Jimblebar Iron Ore Project, subject of Statement No. 683 dated 16 August 2005, Statement No. 809 dated 7 October 2009 and Statement No. 857 dated 18 February 2011 (as amended by Statement No. 1029).

Ministerial Statements 1012 and MS 439: Orebody 18 Iron Ore Mine was issued 7 August 2015, which allowed the development of an open cut iron ore mine at Orebody 18, with supporting infrastructure (rail spur, crushing, screening and load out facilities). Ministerial Statement 439 was originally issued 6 February 1997, which had three post assessment changes approved under section 45C (19 August 2008, 17 June 2013, and 3 February 2015) to modify pit and infrastructure locations, increase disturbance area and OSAs. On 25 March 2015 the Minister for Environment directed the EPA to inquire into changing implementation conditions under section 46, particularly for the matter of native vegetation clearing offsets, which resulted in condition 8 (offset impacts via financial contribution to what is now the Pilbara Environment Offset Fund), within MS 1012.

Ministerial Statement 1021: Orebody 31 Iron Ore Mine was issued 12 November 2015, which allowed the construction and operation of an open-cut iron ore mine and associated infrastructure, approximately 40 km east of Newman. There have been no post-assessment changes associated with this proposal.

The EPA's assessment has been undertaken in the context of the above existing proposals, having regard to the combined and cumulative effects on the environment. The EPA has also considered whether the implementation of conditions of the existing proposals remain relevant.

Ministerial Statement's 1126, 439, 1012 and 1021 are considered in Table I1.

The EPA has recommended that the current Ministerial Statements 1126, 439 1012, and 1021 are superseded and a new statement is issued for the amended proposal (see recommended conditions in Appendix A).

Table I1: Consideration of Ministerial Statement's 1126, 439, 1012, and 1021

Ministerial Statement number	Ministerial Statement condition	Environmental Factor	Proposed Changes	Comments including assessment and evaluation of proposed changes where relevant to ensure the proposal can be implemented consistently with EPA objectives
MS 1126 - Jimblebar Optimisation Project				
1126	Condition 1	N/A (Proposal Implementation)	Delete condition and replace with consolidated contemporary style condition A1.	This condition has been replaced by condition A1 which sets out the scope of the proposal that may be implemented consistent with the EPA's contemporary approach to condition setting.
	Condition 2	N/A (Contact Details)	Delete condition and replace with consolidated contemporary style condition D3.	Notification of a change in contact details is addressed through a new contemporary condition.
	Condition 3	N/A (Compliance Reporting)	Delete condition and replace with consolidated contemporary style conditions D1, D2, D5 and D6.	This condition has been replaced by conditions D1, D2, D5 and D6 which reflect the EPA's contemporary approach to condition setting for compliance reporting.
	Condition 4	N/A (Public Availability of Data)	Delete condition and replace with consolidated contemporary style conditions D5.	This condition has been replaced by conditions D5 which reflect the EPA's contemporary approach to condition setting for the public availability of data.
	Condition 5	Flora and Vegetation Environmental Management Plan	Delete condition and replace with new condition B1	The EPA has assessed the combined effects of the significant amendment proposal and the approved

				proposal with regards to impacts on flora and vegetation and included a new condition B1 that sets out requirements for avoiding and minimising impacts on native vegetation, priority species and riparian vegetation for the remaining life of the proposal.
	Condition 6	Subterranean Fauna Environmental Management Plan	Delete condition and replace with new condition B3.	The EPA has assessed the combined effects of the significant amendment proposal and the approved proposal with regards to impacts on subterranean fauna and included a new condition B3 that sets out requirements for maintaining groundwater levels and water quality for the remaining life of the proposal.
	Condition 7	Water Environmental Management Plan	Delete condition and replace with new condition B3.	The EPA has assessed the combined effects of the significant amendment proposal and the approved proposal with regards to the impacts on water quality and the hydrological regime at Jimblebar Hub and included a new condition B3 that sets out requirements for managing the potential impacts on groundwater and surface water for the remaining life of the proposal.
	Condition 8	Rehabilitation and Decommissioning	Delete condition and replace with new conditions B6 and B7.	The EPA has assessed the combined effects of the significant

				amendment proposal and the approved proposal with regards to mine closure and included a new condition B6 and B7 that sets out requirements for closure and rehabilitation for the remaining life of the proposal.
	Condition 9	Offsets	Include as a standalone condition, with updates to contemporise as condition B8.	The EPA has determined the original condition remains relevant, however requires contemporisation due to the development of the PEOF since the approval of MS 1021. The EPA has assessed the existing approval and proposed significant amendment and has determined that offsets in the form of contribution to the PEOF will be required for the life of the proposal to counterbalance significant residual effects to flora and vegetation, and terrestrial fauna. By continuing to contribute to the PEOF through condition B8, the proposal is able to meet the EPA's objective for these factors.
MS 439 and MS 1012 - Orebody 18 Iron Ore Mine				
439	Condition 1	N/A (Proponent Commitments)	Delete condition and adopt contemporary approach by including standalone conditions for	This condition requires the implementation of the proponent's environmental management procedures to ensure

			each commitment.	the environmental objectives in <i>Section 3 of the Environmental Protection Authority Bulletin 840</i> are met. Each commitment has been addressed through conversion to standalone conditions and are discussed further below.
	Condition 2	N/A (Implementation)	Delete condition and replace with consolidated contemporary style condition A1.	This condition has been replaced by condition A1 which sets out the scope of the proposal that may be implemented consistent with the EPA's contemporary approach to condition setting.
	Condition 3	N/A (Proponent)	Delete condition and replace with new condition D3.	A proponent nomination condition is no longer required as section 38I of the EP Act and Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2021 (Western Australian Government 2021) set out the responsibilities and administrative requirements for the change of proponent/person responsible for the proposal. Notification of a change in contact details is addressed through a new contemporary condition.
	Condition 4	N/A (Environmental Management)	Delete condition and replace with new conditions B1, B2, and B3.	The EPA has assessed the combined effects of the significant amendment proposal and the approved

				proposal with regards to the impacts to flora and vegetation, terrestrial fauna, subterranean fauna and inland waters and included new conditions B1, B2 and B3 that sets out requirements for managing the impacts on these key factors for the remaining life of the proposal.
	Condition 5	N/A (Decommissioning)	Delete condition and replace with new condition B6.	The EPA has assessed the combined effects of the significant amendment proposal and the approved proposal with regards to closure and decommissioning and included new conditions B6 and B7 that sets out requirements for closure and rehabilitation for the remaining life of the proposal.
	Condition 6	N/A (Time Limit on Approval)	Delete condition and replace with new condition D4.	The approved proposal under MS 439 has already commenced. The significant amendment is to continue operations within the Jimblebar Hub for the next 36 years. Accordingly, this condition has been deleted and replaced with new condition D4 requiring implementation of the proposal within the significant amendment to be commenced within 5 years, noting this is the next key milestone.

	Condition 7	N/A (Compliance Auditing)	Delete condition and replace with consolidated contemporary style conditions D1, D2, D5 and D6.	This condition has been replaced by conditions D1, D2, D5 and D6 which reflect the EPA's contemporary approach to condition setting for compliance auditing and performance review.
1012	Condition 8	N/A (Offsets)	Include as a standalone condition, with updates to contemporise as condition B8.	The EPA have determined the original condition remains relevant, however requires contemporisation due to the development of the PEOF since the approval of MS 1021. The EPA has assessed the existing approval and proposed significant amendment and has determined that offsets in the form of contribution to the PEOF will be required for the life of the proposal to counterbalance significant residual effects to flora and vegetation, and terrestrial fauna. By continuing to contribute to the PEOF through condition B8, the proposal is able to meet the EPA's objective for these factors.
MS 1021 - Orebody 31 Iron Ore Mine				
1021	Condition 1	N/A (Proposal Implementation)	Delete condition and replace with consolidated contemporary style condition A1.	This condition has been replaced by condition A1 which sets out the scope of the proposal that may be implemented consistent with the EPA's contemporary approach to condition setting.

	Condition 2	N/A (Contact Details)	Delete condition and replace with consolidated contemporary style condition D3.	Notification of a change in contact details is addressed through a new contemporary condition.
	Condition 3	N/A (Time Limit for Proposal Implementation)	Delete condition and replace with new condition D4.	The approved proposal under MS 1021 has already commenced. The significant amendment is to continue operations under the umbrella of the Jimblebar Hub for the next 36 years. Accordingly, this condition has been deleted and replaced with new condition D4 requiring implementation of the proposal within the significant amendment to be commenced within 5 years, noting this is the next key milestone.
	Condition 4	N/A (Compliance Reporting)	Delete condition and replace with consolidated contemporary style conditions D1, D2, D5 and D6.	This condition has been replaced by conditions D1, D2, D5 and D6 which reflect the EPA's contemporary approach to condition setting for compliance reporting.
	Condition 5	N/A (Public Availability of Data)	Delete condition and replace with consolidated contemporary style conditions D5.	This condition has been replaced by condition D5 which reflects the EPA's contemporary approach to condition setting for the public availability of data.
	Condition 6	<i>Acacia</i> sp. East Fortescue flora species (Flora and Vegetation)	Delete condition and replace with new condition B1.	The requirements of this condition are still relevant and will be retained consistent with contemporary conditions setting approach

				recommended by the EPA (recommended conditions B1-1, B1-6 and B1-7.
	Condition 7	Surplus Water Discharge (Hydrological Processes)	Delete condition and replace with new condition B3.	The EPA has assessed the combined effects of the significant amendment proposal and the approved proposal with regards to surface water disposal and included a new condition B3 that sets out requirements for managing the impacts of groundwater levels and quality, as well as managing the impacts of surface water disposal on Jimblebar Creek and Caramulla Creek for the remaining life of the proposal.
	Condition 8	Surplus Water Discharge (Inland Waters Environmental Quality)	Delete condition and replace with new condition B3.	The EPA has assessed the combined effects of the significant amendment proposal and the approved proposal with regards to surface water disposal and included a new condition B3 that sets out requirements for managing the impacts of groundwater levels and quality, as well as managing the impacts of surface water disposal on Jimblebar Creek and Caramulla Creek for the remaining life of the proposal.
	Condition 9	N/A (Rehabilitation and Decommissioning)	Delete condition and replace with new conditions B6 and B7.	The EPA has assessed the combined effects of the significant amendment proposal and the approved

				proposal with regards to mine closure and included new conditions B6 and B7 that sets out requirements for closure and rehabilitation for the remaining life of the proposal.
	Condition 10	Offsets	Include as a standalone condition, with updates to contemporise as condition B8.	The EPA has determined the original condition remains relevant, however requires contemporisation due to the development of the PEOF since the approval of MS 1021. The EPA has assessed the existing approval and proposed significant amendment and has determined that offsets in the form of contribution to the PEOF will be required for the life of the proposal to counterbalance significant residual effects to Flora and Vegetation, and Terrestrial Fauna. By continuing to contribute to the PEOF through condition B8, the proposal is able to meet the EPA's objective for these factors.