Jimblebar Operations – Jimblebar Beneficiation Project Works Approval

Application for a Works Approval
Supporting Documentation (Including Information relating to Attachments 1 to 11)

January 2025

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1. Introduction

1.1. Background

BHP Iron Ore Pty Ltd (BHP) currently operates a number of Iron Ore mines and associated rail and port infrastructure within the Pilbara region of Western Australia (WA). Current mining operations include the:

- Newman Operations consisting of the:
  - Whaleback hub located approximately two kilometres (km) west of Newman Township and consists of Mount Whaleback, and Orebodies (OB) 29, 30 and 35 (**Attachment 2.1**); and
  - Eastern Ridge hub located approximately 5 km east of Newman Township and consists of Orebodies 23, 24, 25 and 32;
- Mining Area C / Southern Flank located approximately 90 km north west of Newman Township;
- Jimblebar Operations consisting of Wheelarra Hill (Jimblebar) Mine, Orebody 18 and Orebody 31 are located approximately 35 km east of Newman Township;
- Yandi Mine located approximately 100 km north west of Newman Township.

Ore from the Newman Operations, Mining Area C, Jimblebar Operations and Yandi mining operations is transported to Port Hedland via the BHP Newman to Port Hedland Mainline (and associated spur lines). Ore is then shipped out through Port Hedland at the BHP facilities at Nelson Point and Finucane Island.

1.2. Purpose of this Document

The Jimblebar Mining Operations are currently approved under Ministerial Statement (MS) 1126. On the 19 of December 2023 BHP referred, under s38 of the *Environmental Protection Act 1986* (EP Act), a significant amendment for the Jimblebar Mining Operations to the EPA (**Attachment 5A**). The significant amendment includes the construction and operation on a beneficiation plant at Jimblebar and an in-pit tailings facility at Orebodies 17 / 18. This facility will not increase the overall approved processing rate for the Huib.

BHP is seeking to parallel process a Works Approval to allow for the construction, commissioning and time limited operations (TLO) of the following infrastructure associated with the significant amendment (**Attachment 2.1**):

Category 5:

45 million tonnes per annum (mtpa) beneficiation plant (**Attachment 2.2**) consisting of a:

- Dry Inflow and Outflow System;
- Beneficiation / Wet Processing Plant; and
- Tailings Disposal System.

Other Infrastructure:

- The following infrastructure will also be constructed but does not trigger a Category in Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regs):
  - Concrete Batching Plant; and
  - Substation / powerline upgrades.

1.3. Premises

At its closest point the boundary of the Jimblebar Beneficiation Works Approval Application Area (Application Area) (**Attachment 2.1**) is more than 30 km east of the Town of Newman in the Pilbara region of WA.

The Application Area is on the following tenements:

- Mineral Lease ML244SA
- Mining Lease M266SA

1.4. Existing Approvals

1.4.1. *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

The proposed works approval application area falls within the boundary of BHP's Commonwealth Strategic Environmental Assessment (SEA). A Validation Notice has been prepared under the Federal SEA and is in effect as of 17 September 2024.

1.4.2. *Environmental Protection Act 1986* (EP Act)

The Jimblebar Mining Operations are currently approved under Ministerial Statement (MS) 1126. On the 19 of December 2023 BHP referred, under s38 of the *Environmental Protection Act 1986* (EP Act), a significant amendment for the Jimblebar Mining Operations to the EPA. The significant amendment includes the construction and operation on a beneficiation plant at Jimblebar and an in-pit tailings facility at Orebody 18.

BHP referred the Jimblebar Mining Operations to the EPA on 19 of December 2023 as a significant amendment to MS 1126 (Jimblebar Mining Operations). The Jimblebar Beneficiation Project is a sub-set of the broader Jimblebar mine expansion and related scope of works which is included in the Jimblebar Hub Project.

The Application Area overlaps the existing Jimblebar Hub Environmental Licence L5415/1988/9 (**Attachment 5A**). Following execution of the works approval an application will be submitted to include the operational requirements of the Jimblebar Beneficiation Works Approval to the Jimblebar Hub Environmental Licence L5415/1988/9.

1.5. Local Government

The Project is located within the Shire of East Pilbara.

1.6. Sensitive Receptors

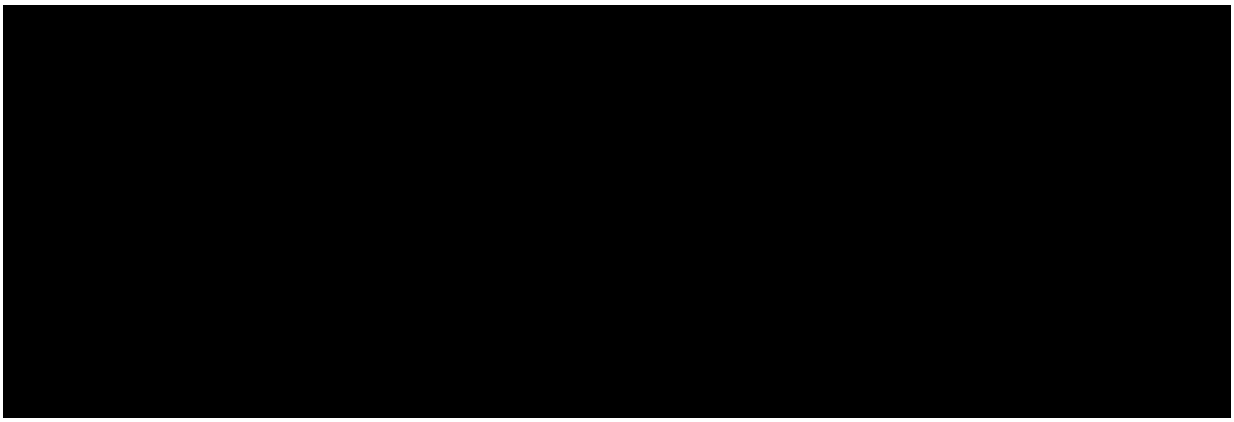
The closest sensitive receptors are:

- the Town of Newman located more than 30 km west of the Application Area (**Attachment 2.1**);
- the Sylvania homestead located more than 24 km to the south of the Application Area; and
- the Ethel Gorge aquifer stygobiont community located more than 15 km west of the Application Area (**Attachment 2.1**).

1.7. Proponent

This works approval application has been submitted by BHP as the manager for BHP Iron Ore (Jimblebar) Pty Ltd (100%) and the Newman Joint Venture (NJV). The split between the partners are:

- BHP Iron Ore (Jimblebar) Pty Ltd 100%
- NJV:
  - BHP Minerals Pty Ltd 85%
  - Itochu Minerals and Energy Australia Pty Ltd 5%
  - Mitsui Iron Ore Corporation Pty Ltd 10%



2. Project Timeframes

The indicative construction, commissioning and TLO timeframes for the Jimblebar Beneficiation Project are outlined in **Table 1**.

Table 1: Indicative Project Timeframes

Category	Infrastructure	Construction Commences	Commissioning Commences	Commissioning Completed	Time Limited Operations Commences
5	Wet Plant / Beneficiation Plant	Nov 2025	Nov 2027	Aug 2028	Sept 2028
	Conveyor System, Transfer and Sample Stations	Nov 2026	Oct 2027	Aug 2028	Sept 2028
	Tailings	Oct 2026	Oct 2027	Aug 2028	Sept 2028

3. Existing Environment

3.1. Climate

Newman Aero meteorological site (007176) is the closest Bureau of Meteorology (BoM) station to the to the Application Area. Average annual rainfall at Newman Aero is 318.0 mm (BOM, 2024a). This is mainly derived from tropical storms and cyclones during summer, producing sporadic, heavy rains over the area. Mean monthly rainfall varies from 4.6 mm in September to 71.6 mm in February (BoM, 2024a). Daily rainfall is highly variable; the highest maximum daily rainfall ranges from 34.8 mm in October, to 305.6 mm in February (BoM, 2024a). The mean maximum temperature in summer months (October to March) is 35.2°C to 39.4°C, and mean maximum temperature in winter (April to September) is between 23.0°C and 32.1°C (BoM, 2024a).

Wittenoom meteorological site (005026) is the closest station to the Application Area that records daily evaporation. Wittenoom is located approximately 120 km northwest of the Application Area. Mean daily evaporation at Wittenoom throughout the year is 8.6 mm/day (BoM, 2024b), which equates to 3.1 metres per year. Evaporation greatly exceeds rainfall in the region throughout the year and on a month-by-month basis (BoM, 2024b).

3.2. Soils and Landform

The Application Area is located in the following six land systems, as mapped by van Vreeswyk et al. (2004).

Boolgeeda: "Stony lower slopes, level stony plains and narrow sub-parallel drainage floors, relief up to 20 m. A common system in shallow valleys below hill systems such as Newman and Rocklea."

Jamindie: "Level to gently undulating hardpan wash plains with mantles of ironstone grit and pebbles, minor stony plains, low rises and occasional low ridges with relief up to 30 m."

McKay: "Hills, ridges, plateaux remnants and minor breakaways of sedimentary and meta sedimentary rocks, relief up to 100 m."

Newman: "Rugged high mountains, ridges and plateaux with near vertical escarpments of jaspilite, chert and shale, the second largest system in the survey area and prominent in southern parts (e.g. Ophthalmia Range, Hamersley Range), relief up to 450 m."

Soils of the Pilbara region have been defined and mapped at a scale of 1:2,000,000 by Bettenay et al. (1967). The following soil unit occurs within the Application Area, based on mapping by Bettenay et al. (1967):

Fa13: "Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. This unit is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover: chief soils are shallow stony earthy loams (Um5.51) along with some (Uc5.11) soils on the steeper slopes. Associated are (Dr2.33, Dr2.32) soils on the limited areas of dissected pediments, while (Um5.52) and (Uf6.71) soils occur on the valley plains."

There is no known risk of acid sulphate soils within the Application Area.

3.3. Surface Water

The Application Area is located in the Pilbara Surface Water Area, proclaimed under the *Rights in Water and Irrigation Act 1914,* (RIWI Act) (DoW, 2009a).

Two minor non-perennial watercourses occur within the Application Area.

3.4. Groundwater

The Application Area is located in the Pilbara Groundwater Area proclaimed under the RIWI Act (DoW, 2009a).

There is one main aquifer within the Application Area, the Hamersley – Fractured Rock Aquifer:

> "The Precambrian rocks of the Hamersley Basin are principally volcanics, shales and iron formations. Groundwater is contained within fractures within these rocks. The groundwater level may be deep below the surface, and is generally fresh. The main use of this aquifer is for mining and mine dewatering from iron ore mines. Bores have also been drilled for road and railway construction. There will be increasing dewatering from the fractured rocks around iron ore mines as the pits become deeper" (DoW, 2015a).

The Beneficiation Project is located more than 2 km east of the Newman Water Reserve a P1 public drinking water source area. Depth to groundwater across the Application Area ranges from approximately 120 m at the location of the proposed wet plant to 30 m at Orebody 18.

3.4.1. Ethel Gorge and Ophthalmia Dam

Ethel Gorge (the Gorge) is downstream (north) of the confluence of Homestead, Shovelanna and Warrawanda Creeks within the Fortescue River catchment. The Gorge is formed where the Fortescue River flows through the Ophthalmia Range in a northerly direction. Surface and groundwater flows from the entire upstream catchment area are focused into the Gorge resulting in relatively shallow groundwater levels, typically less than 10 mbgl. The area hosts the Ethel Gorge Stygobiont Threatened Ecological Community (Ethel Gorge TEC) (RPS Aquaterra, 2014).

The Gorge groundwater system occurs in valley sediments bounded by low permeability basement rocks. It consists of a highly permeable alluvial aquifer comprising an upper unit of sandy-alluvium and calcrete (upper alluvial aquifer) and a lower unit of gravelly-alluvium (deep aquifer). The two units are separated by a low permeability clay sequence (RPS Aquaterra, 2015).

The Gorge groundwater system has been dominated by Ophthalmia Dam since it's commissioning in 1981. The dam was designed to substantially increase groundwater recharge and loading on the alluvial aquifer to offset drawdown from the Ophthalmia Borefield. Ophthalmia Dam is a MAR scheme which impounds and retards flood waters in the Fortescue River to allow larger volumes of infiltration over a prolonged period. Groundwater levels in the aquifer have been sustained at much higher levels since the dam was constructed than would otherwise have been the case (RPS Aquaterra, 2014).

3.4.2. Groundwater at the In Pit Tailings Storage Facility

The Swan Pit and the adjacent OB31 Mining Operations are situated within an orebody aquifer which is compartmentalised, bounded by faulting and low permeability formations to the north, east, and south. The groundwater levels are significantly lower in each of these directions. Groundwater flow from the OB31/Swan aquifer compartment can occur to the west, into the Mesa Gap regional aquifer. The Swan orebody is hydraulically disconnected from the regional aquifer directly to the south but is connected to the OB31 aquifer, therefore, has an indirect connection to the regional aquifer. There is currently no pit lake at the Swan pit.

The De Grey orebody does not show evidence of direct or indirect connection to the regional Wittenoom Formation aquifer to the south. The hydraulic barrier (potentially formed by a dyke) through the Wittenoom Formation aquifer and possibly between De Grey and Swan orebodies, reduces the hydraulic connectivity and effectively separates the Mesa Gap and OB31/ Swan groundwater systems into compartments. A second dyke is interpreted to form a groundwater flow barrier between the Mesa Gap and Ninga MAR groundwater systems, creating another compartment (WSP, 2025a) (**Attachment 5B**).

The De Grey pit contains a pre-existing acidic pit lake. The pit lake water will be neutralised prior to commencement of tailings deposition into De Grey pit to achieve a circum-neutral conditions (pH~6.5) for the initial months of tailings deposition. The input of process water is predicted to provide sufficient neutralisation to buffer acidity input from pit wall runoff, and the Potentially Acid Forming (PAF) source will be rapidly inundated by the rising tailings level. The predicted pH evolves during subsequent filling phases and fallow periods to more alkaline conditions and remains relatively consistent for the model duration (**Attachment 5C**) (WSP, 2024).

The Tertiary Detritals, that overlie the Wittenoom Formation, are not impeded by the dykes and likely transmit water regionally when saturated, but at a lower rate than the Wittenoom Formation.

Groundwater (and seepage) is unlikely to travel across the two dykes to Ethel Gorge at a significant rate, regardless of whether dewatering at OB31 has created a hydraulic gradient.

3.5. Flora and Vegetation

No significant flora species listed under the EPBC Act or the *Biodiversity Conservation Act, 2016* (BC Act) or listed as Priority flora by the Department of Biodiversity Conservation and Attractions (DBCA) have been identified within the Application Area.

Thirteen Broad Floristic Communities and 39 vegetation associations have been identified within the Application Area (Astron, 2023; and Onshore Environmental, 2014) (**Table 2**).

Table 2: Vegetation associations of the Application Area

Broad Floristic Community	Vegetation Association	
**Cenchrus* Tussock Grassland	FP CcTtEua Ch AdAssAanc	Tussock grassland of **Cenchrus ciliaris*, *Themeda triandra* and *Eulalia aurea* with low woodland of *Corymbia hamersleyana* over high open shrubland of *Acacia dictyophleba*, *Acacia sclerosperma* subsp. *sclerosperma* and *Acacia ancistrocarpa*.
Acacia High Open Shrubland	FP ApaAa Erfr TsTp	High Open Shrubland of *Acacia paranerua* and *Acacia aptaneura* over Open Shrubland of *Eremophila fraseri* over Very Open Hummock Grassland of *Triodia vanleeuwenii* and *Triodia pungens* on red clay loam on floodplains and stony plains.
	SP AaAp ArcAri TbTp	High Open Shrubland of *Acacia aptaneura* and *Acacia paraneura* over Scattered Tussock Grasses of *Aristida contorta* and *Aristida inaequiglumis* and Scattered Hummock Grasses of *Triodia basedowii* and *Triodia pungens* on red clay loam on flats and stony plains.
Acacia *High Shrubland*	MI AerAancAnl TtEuaErmu Aa	High Shrubland of *Acacia eriopoda*, *Acacia ancistrocarpa* and *Androcalva luteiflora* with Open Tussock Grassland of *Themeda triandra*, *Eulalia aurea* and *Eriachne mucronata* with Low Open Woodland of *Acacia aptaneura* on brown sand on minor drainage lines.
Acacia Low Open Forest	SP AaApr ErcuColpSop TpTw	Low Open Forest of *Acacia aptaneura* and *Acacia pruinocarpa* over with Low Open Shrubland of *Eremophila cuneifolia*, *Corchorus lasiocarpus* subsp. *parvus* and *Solanum phlomoides* over Hummock Grassland of *Triodia pungens* and *Triodia wiseana*.
Acacia low open woodland	FP AcaoAaAci AaErfr ArlaArcErer	Low Open Woodland of *Acacia catenulata* subsp. *occidentalis* and *Acacia aptaneura* over High Open Shrubland *of Acacia aptaneura* and *Eremophila fraseri* over Open Tussock Grassland of *Aristida latifolia*, *Aristida contorta* and *Eragrostis eriopoda*.
Acacia Low Woodland	FP AaAprAci RheAa CcChfArin	Low Woodland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Acacia catenulata* subsp. *occidentalis* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii*, *Dodonaea petiolaris* and *Sida ectogama* over Open Tussock Grassland of *Aristida contorta*, *Digitaria ammophila* and *Aristida inaequiglumis* on red orange clay loam on floodplains.
	FP ApAaApr AsyErffPto CcAriArc	Low Woodland of *Acacia paraneura*, *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Acacia synchronicia*, *Eremophila forrestii* subsp. *forrestii* and *Ptilotus obovatus* over Open Tussock Grassland of **Cenchrus ciliaris*, *Aristida inaequiglumis* and *Aristida contorta* on red brown loam on floodplains.
	FP AaAprAcao ErffDopeSie ArcDiaAri	Low Woodland of *Acacia aptanerua*, *Acacia pruinocarpa* and *Acacia catenulata* subsp. *occidentalis* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii*, *Dodonaea petiolaris* and *Sida ectogama* over Open Tussock Grassland of *Aristida contorta*, *Digitaria ammophila* and *Aristida inaequiglumis* on red orange clay loam on floodplains.
Acacia Open Shrubland	SP AaAp ArcAri TbTp	High Open Shrubland of *Acacia aptaneura* and *Acacia paraneura* over Scattered Tussock Grasses of *Aristida contorta* and *Aristida inaequiglumis* and Scattered Hummock Grasses of *Triodia basedowii* and *Triodia pungens* on red clay loam on flats and stony plains.
Acacia Shrubland	MI AmoAanPl ChEl TtAin	Shrubland of *Acacia monticola*, *Acacia ancistrocarpa* and *Petalostylis labicheoides* with Scattered Low Trees of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Tussock Grassland of *Themeda triandra* and *Aristida inaequilatera* on red loamy sand on minor drainage lines.
Eragrostis Tussock Grassland	GP ExeEbCf AsyAteVf NdTc	Tussock Grassland of *Eragrostis xerophila*, *Eriachne benthamii* and *Chrysopogon fallax* with Open Shrubland of *Acacia synchronicia*, *Acacia tetragonophylla* and **Vachellia farnesiana* over Very Open Herbs of *Neptunia dimorphantha* and *Tephrosia clementii* on red light clay on gilgai plains.
	GP ErxErbChf AsyAteVf NedTec	Tussock Grassland of *Eragrostis xerophila*, *Eriachne benthamii* and *Chrysopogon fallax* with Open Shrubland of *Acacia synchronicia*, *Acacia tetragonophylla* and **Vachellia farnesiana* over Very Open Herbs of *Neptunia dimorphantha* and *Tephrosia clementii* on red light clay on gilgai plains
Frankenia Low Shrubland	SP Frs HapAsy ArcEnra	Low Shrubland of *Frankenia setosa* with Scattered Tall Shrubs of *Hakea preissii* and *Acacia synchronicia* over Very Open Tussock Grassland of *Aristida contorta* and *Enteropogon ramosus* on orange brown loamy sand on stony plains.
Myriocephalus Herbs	FP MyruAlnoGl Ecr ErkeErte	Herbs of *Myriocephalus rudallii*, *Alternanthera nodiflora* and *Goodenia lamprosperma* with Low Woodland of *Eucalyptus camaldulensis* over Open Tussock Grassland of *Eragrostis kennedyae* and *Eragrostis tenellula* on red brown sandy loam on floodplains.

Broad Floristic Community	Vegetation Association	
Triodia Hummock Grassland	FP Tb AaApr Erff	Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii* on red sandy loam on floodplains.
	FP Tp EtEg AbAancPl	Hummock Grassland of *Triodia pungens* with Very Open Mallee of *Eucalyptus trivalva* and *Eucalyptus gamophylla* over Shrubland of *Acacia bivenosa*, *Acacia ancistrocarpa* and *Petalostylis labicheoides* on red brown loam on uninsised drainage tracts on floodplains.
	HC TsTp EkkEg	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Trioidia pungens* with Very Open Mallee of *Eucalyptus kingsmillii* subsp. *kingsmillii* and *Eucalyptus gamophylla* on red sandy loam on hill crests and upper hill slopes.
	HC Tw Ah EkkEgCh	Hummock Grassland of *Triodia wiseana* with Shrubland of *Acacia hamersleyensis* and Open Mallee of *Eucalyptus kingsmillii* subsp. *kingsmillii*, *Eucalyptus gamophylla* and *Corymbia hamersleyana* (mallee form) on red brown loam and silty loam on hill crests.
	HS Tb	Hummock Grassland of *Triodia basedowii* on red sandy loam on low hills.
	HS TbrTw AiAprHc EfrEpl	Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* with High Open Shrubland of *Acacia inaequilatera*, *Acacia pruinocarpa* and *Hakea chordophylla* over Open Shrubland of *Eremophila fraseri* and *Eremophila platycalyx* subsp. *pardalota* on red loamy sand on lower hill slopes and footslopes.
	HS TbrTw El AbPoSgg	Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* with Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* over Scattered Low Shrubs of *Acacia bivenosa*, *Ptilotus obovatus* and *Senna glutinosa* subsp. glutinosa on brown silty loam on scree slopes.
	HS TpTb EllCh ErmuErlaAh	Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Open Tussock Grassland of *Eriachne mucronata*, *Eriachne lanata* and *Aristida holathera* subsp. *holathera* on red sandy loam on hill slopes.
	HS Ts	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) on red brown sandy loam on hill slopes.
	HS TsTwTp EllCh AhiAaa	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxa* on red brown sandy loam on hill slopes.
	HS Tw EllChHc AancAbAa	Hummock Grassland of *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Hakea chordophylla* and Open Shrubland of *Acacia ancistrocarpa*, *Acacia bivenosa* and *Acacia aptaneura* on red sandy loam on hill slopes
	SA Tb ChEg ScpBeKep	Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus gamophylla* over Low Open Shrubland of *Scaevola parvifolia*, *Bonamia erecta* and *Kennedia prorepens* on red loamy sand on sand plains.
	SA Tb ChHllAa ApacAanc	Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Corymbia hamerleyana*, *Hakea lorea* subsp. *lorea* and *Acacia pruinocarpa* with High Open Shrubland of *Acacia ancistrocarpa* on orange brown sand on sand plains.
	SP Tb AbAprAads	Hummock Grassland of *Triodia basedowii* with Shrubland of *Acacia bivenosa*, *Acacia pruinocarpa* and *Acacia adsurgens* on red loamy sand on stony plains.
	SP TbTp HlAanAi Ch	Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with High Open Shrubland of *Hakea loreus* subsp. *loreus*, *Acacia ancistrocarpa* and *Acacia inaequilatera* and Scattered Low Trees of *Corymbia hamersleyana* on red brown loamy sand on stony plains.
	SP TpTb Eg PlAbAan	Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Mallee of *Eucalyptus gamophylla* and Shrubland of *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* on red brown loamy sand on stony plains and footslopes.
	SP TpTwTs ErfrSegpSea o	Hummock Grassland of *Triodia pungens*, *Triodia wiseana* and *Triodia vanleeuwenii* with Open Shrubland of *Eremophila fraseri*, *Senna glutinosa* subsp. *pruinosa* and *Senna artemisioides* subsp. *oligophylla* on red brown loamy sand on stony plains and hill slopes.
	Ml TsTp AancAmGrw h	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia pungens* with Shrubland of *Acacia ancistrocarpa*, *Acacia monticola* and *Grevillea wickhamii* subsp. *hispidula* on brown sandy loam on minor drainage lines.

Broad Floristic Community	Vegetation Association	
Triodia Open Hummock Grassland	GG Tp CfFibAcao DopAh	Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Corymbia ferriticola*, *Ficus brachypoda* and *Acacia catenulata* subsp. *occidentalis* over High Open Shrubland of *Dodonea pachyneura* and *Acacia hamerselyensis* on red sandy clay loam in gullies and on breakaway slopes.
	HS TmeTp AprAcaAmu CyaErmu	Open Hummock Grassland of *Triodia* sp. Mt Ella and *Triodia pungens* with Low Open Woodland of *Acacia pruinocarpa* and *Acacia catenulata* subsp. *occidentalis* over Open Tussock Grassland of *Cymbopogon ambiguus* and *Eriachne mucronata.*
	HS Tp AaApr ErfrAmarSegl	Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Eremophila fraseri*, *Acacia marramamba* and *Senna glutinosa* subsp. x *luerssenii* on red brown loam on hills.
	HS TpTb EllAaAcao SesSeglErcu	Open Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura* and *Acacia catenulata* subsp. *occidentalis* over Open Shrubland of *Senna stricta*, *Senna glutinosa* subsp. x *luerssenii* and *Eremophila cuneifolia* on orange sandy loam on hill slopes.
	HS TsTpTb AaAprAw AteEreErll	Open Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia pungens* and *Triodia basedowii* with Low Open Woodland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Acacia wanyu* and Open Shrubland of *Acacia tetragonophylla*, *Eremophila exilifolia* and *Eremophila latrobei* subsp. latrobei on red sandy loam on hill slopes
	SP Tp ApAaAay Aw	Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Acacia paraneura*, *Acacia aptaneura* and *Acacia ayersiana* and Open Shrubland of *Acacia wanyu* on red brown sandy loam on bare stony plains.

None of these vegetation associations are representative or associated with a Threatened Ecological Community (TEC) listed under the EPBC Act or an Environmentally Sensitive Area under the EP Act or a Priority Ecological Community (PEC) listed by the DCBA.

Vegetation condition ranges from Excellent to disturbed.

Any vegetation disturbance will be undertaken in accordance with the new Ministerial Statement for the Significant Amendment to MS 1126 following approval by the Minister for the Environment.

3.6. Vertebrate Fauna

Biologic (2017) and GHD (2019) identified the following six fauna habitat types occur within the Application Area:

- **Drainage Area/ Floodplain:** Lower lying plain often subjected to sheet flow following large rainfall events. Vegetation and substrates of this habitat was variable, often comprising scattered *Eucalyptus* over *Acacia* and/or *Grevillea* shrubs with an understory dominated by *Triodia* hummock grasses and/or mixed tussock grasses on alluvial substrates, often with heavy clays and gravel. Tussock grasses can be dominant within Drainage Area/ Floodplain habitat as a result of high rainfall events.
- **Gorge/ Gully:** Characterised by rugged, steep-sided valleys incised into the surrounding landscape. Gorges are deeply incised with vertical cliff faces, while gullies are more open (but not as open as Minor Drainage Lines). Caves and rock pools are most often encountered in this habitat type. Vegetation can be dense and complex in areas of soil deposition or sparse and simple where erosion has occurred.
- **Hillcrest/ Hillslope:** Comprises a rocky substrate, often with exposed bedrock, on moderate to steep slopes leading into lower footslopes. This habitat was characterised by steep slopes with a high proportion of coarse fragments dominated by ironstone. These can contain cracks and crevices. Instances of Gorge/ Gully is contained within this habitat. This habitat is usually dominated by open *Eucalyptus* woodlands, *Acacia* and *Grevillea* scrublands and *Triodia* low hummock grasslands.
- **Mulga Woodland:** Comprises stands of mulga (*Acacia aneura*) over clay or stony substrates. Differs from other plains by having a monoculture of mulga compared to a diversity of other Acacia species.
- **Sand Plain:** Sand Plain habitat is characterised by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat transitions into patches of Mulga in places. This habitat often occurs as terraces along Major Drainage Lines.
- **Stony Plain:** Comprises low-lying open plains and the rolling hills below upland areas, with very slight to no gradient. The substrate consists of gravel and pebbles, with vegetation dominated by *Triodia* and scattered Mulga, eucalpyt and *Acacia* trees, with patches of various small to medium shrub species.

No caves or waterholes have been identified within or adjacent to the Application Area.

No significant fauna species have been recorded within the Application Area. There are historical records of the Western Pebble-mound Mouse (*Pseudomys chapmani*) (DBCA Priority 4) within the Application Area at Orebody 18 however these have been cleared by existing mining activities.

Based on the occurrence of the habitat types and significant fauna species previously recorded in the vicinity an additional seven species are considered to potentially occur within the Application Area (i.e. those considered 'likely' or 'possible' to occur within the Application Area):

- Brush-tailed mulgara (*Dasycercus blythi*) (DBCA Priority 4);
- Fork-tailed Swift (*Apus pacificus*) (Migratory, EPBC Act and BC Act);
- Ghost Bat (*Macroderma gigas*) (Vulnerable EPBC Act and BC Act).
- Grey Falcon (*Falco hypoleucos*) (EPBC Act and BC Act Vulnerable);
- Peregrine Falcon (*Falco peregrinus*) ('Other Specially Protected Fauna' BC Act);
- Pilbara Flat-headed Blind-snake (*Anilios ganei*) (DBCA Priority 1). and
- Pilbara Olive Python (*Liasis olivaceus barroni)* (Vulnerable, EPBC Act and BC Act).

All of these species are expected to be transitory visitors only.

Any potential impacts to these species in accordance with the new Ministerial Statement for the Significant Amendment to MS 1126 following approval by the Minister for the Environment.

3.7. Air Quality

The proposed new beneficiation plant and in pit tailings facility are located more than 30 km east of the Town of Newman (**Attachment 2.1**).

Dust is expected to be generated during clearing activities associated with the proposed infrastructure. Dust emissions from clearing activities is typically associated with machinery movements and is generally not long term; however the resulting unsealed exposed surfaces may be subject to wind erosion.

Minimal dust is expected from the operation of the processing infrastructure as it will be a wet plant and overall hub processing rates will remain unchanged.

BHP will manage dust emissions in accordance with the existing Jimblebar Mining Operations Environmental Licence L5415/1988/9.

3.8. Noise

The proposed new beneficiation plant and in pit tailings facility are located more than 30 km east of the Town of Newman (**Attachment 2.1**).

Construction activities are expected to generate minor increases in noise, however these are not expected to elevate levels above those already experienced in the Town given the separation distance and that works will occur in an active mining and processing area and will be short term in nature.

Operation of the new facilities are unlikely to increase noise levels at Newman given their separation distance and that total hub processing will remain unchanged.

3.9. Contaminated Sites

There are no records of contaminated sites within the Application Area.

4. Environmental Management

4.1. Corporate Level Plans and Procedures

The management of the environmental aspects of BHP's operations for the Prescribed Premises are managed under the company's AS/NZS ISO 14001 certified Environmental Management System (EMS). The EMS describes the organisational structure, responsibilities, practices, processes and resources for implementing and maintaining environmental objectives at all BHP sites.

Additionally, operational controls for environmental management for the Prescribed Premises are guided by BHP's Charter values. The Charter Values outline a commitment to develop, implement and maintain management systems for sustainable development that drive continual improvement and set and achieve targets that promote efficient use of resources. In order to give effect to the Charter Values, a series of "Global Standards" documents have been developed.

BHP has also developed a Sustainable Development Policy for its Iron Ore operations. The Sustainable Development Policy outlines a commitment to setting objective and targets to achieve sustainable outcomes and to continually improve our performance.

To support these documents BHP has an internal Project Environmental and Aboriginal Heritage Review (PEAHR) system for its Iron Ore operations. The purpose of the system is to manage implementation of environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance. All ground disturbance activities will meet the requirements of the PEAHR system.

5. Category 5 Infrastructure – Environmental Impact Assessment and Associated Management Strategies

BHP has assessed the potential emissions and discharges associated with the infrastructure associated with Category 5. The following Section outlines the following:

- Proposed infrastructure to be constructed;
- Potential discharges / emissions and associated potential impacts to sensitive receptors; and
- Management measures and associated residual risk ranking (in accordance with Guidance Statement: Risk Assessments [DER, 2016]).

5.1. Category 5 Infrastructure to be Constructed

The Project involves the construction of a 45 mtpa beneficiation plant (**Attachments 2.1 to 2.3**) consisting of:

- Dry Inflow and Outflow System:
- Beneficiation / Wet Processing Plant;
- Plant Services; and
- Tailings Disposal System.

5.1.1. Dry Inflow and Outflow System

The dry inflow and outflow system will consist of the following infrastructure:

- CV105 / CV131 Feed Transfer Chute (**Attachments 2.4 to 2.6**).

  The original CV105/106 transfer station design for the Jimblebar Ore Handling Plant (OHP) included a future feed diversion location for the Beneficiation Plant as a blanked flange on the end of the feed transfer chute. Part of the existing feed transfer chute will be replaced with a new diverter chute and diverter mechanism arrangement. The diverter mechanism will operate with an on/off protocol on an infrequent basis when the total beneficiation feed needs to be bypassed for long periods of time and will be actuated via two electromechanical actuators.

- CV134 / CV106 Product Conveyor Discharge Chute (**Attachment 2.7 and 2.8**).

  Fines produced by the existing Jimblebar OHP are stockpiled by the existing fines yard conveyor, CV106 before it is loaded onto trains and transported to the Port for export.

  The Beneficiation Stockyard Feed Conveyor CV134 will discharge the beneficiated product onto the tail of existing Fines Stockyard Conveyor CV106 which was originally designed to accept the beneficiated product. The tail of CV106 extends east from CV105 to accommodate installation of the CV134/CV106.

  Existing Transfer Station TS105 (**Attachments 2.4 and 2.8**) is enclosed to minimise dust emissions and will also retain the capability to sample fines from the Jimblebar OHP and transfer the product to the stockyard via CV106.

- CV131 Beneficiation Plant Feed Conveyor (and associated shuttle) (**Attachments 2.4 to 2.6**).

  The Beneficiation Plant Feed Conveyor CV131, transfers fines ore from CV105 to the wet screen feed bins BN100 – BN600. In addition, there is a bypass bin (BN001) located adjacent to, and at the west end of the screen feed bins. The conveyor features low level modules in the loading zone and high-level trusses supported on trestles, hence enabling the product to be elevated to the top of the screening building for distribution into the screen feed and bypass bins. The conveyor discharge is enclosed to minimise dust emissions and will be via a horizontal shuttle, installed above the surge and bypass bins, traversing the length of the bins.

  CV131 includes an ore profile scanner which, in conjunction with CV105 belt weigher will determine bulk density. Moisture and elemental analysers are also included for process control and feedback. The conveyor will be fitted with ploughs, scrapers, skirt modules, dust hoods and bulk ore conditioning sprays.

  The Beneficiation Plant Shuttle (SH131) will move continuously back and forth over the screening bins (BN100-BN600) and bypass bin (BN001) according to the requirements of the ore distribution control logic. There are also forward and reverse ‘maintenance’ positions to which the shuttle can be commanded to move to either locally or from SCADA faceplate.

- Beneficiation Plant Product Conveyor CV133 and Stockyard Feed Conveyor CV134 and Filter Product Conveyor CV132 (**Attachments 2.7, 2.8, 2.10 and 2.11**).

  The Beneficiation Plant Product Conveyor transfer beneficiated fines ore, and belt filter cake, from the beneficiation plant back to CV106. The conveyors feature low-level modules when following the ground

profile and at loading points and elevated trusses supported on trestles when product lift is required.

Key instrumentation installed on these conveyors to provide feedback for plant performance and control include a belt weigher and moisture analyser on CV132, while CV133 includes a belt profile scanner, tramp metal magnet, moisture analyser and belt weigher. The conveyors will be fitted with ploughs and scrapers.

All conveyors have been designed to incorporate structural tensions for head frames and cable sizes for the appropriate sized drive to support a future capacity increase by speed increase only.

- Sample Station SSB160 and Beneficiation Plant Sample Conveyor CV160 (**Attachments 2.10**).

  A standard sample station will be installed over the Beneficiated Plant Product Conveyor CV133 and fed via a sample cutter mounted in the head chute of Conveyor CV133.

  The sample is conveyed to the sample station via a standard sample belt feeder, BF161 discharging onto a near standard sample conveyor, CV160. The rejected sample will be deposited onto Conveyor CV133. The secondary and tertiary feeders are belt feeders to manage the wet fines which have a tendency to stick and build up on the vibe feeder pan and thereby degrade the sample quality.

- Upgrade to Fines Stockyard (**Attachment 2.3**).

  Subsoil drainage (**Attachment 2.9**) will be installed underneath the live fines stockpile to promote moisture reduction (target is ~1% reduction over 3 days) by allowing seepage through the stockpile to be collected and conveyed to an outfall sump to be pumped for use elsewhere in the plant.

  A combination of multiple slotted pipe drains with coarse aggregate will be installed at 5 m intervals and graded along the length of the stockpile (running west to east). This system will convey any seepage flow away from the periphery of the stockpile base into a sump pump pit, to be pumped out to TS133 sump SU133A, back into the process.

5.1.2. Beneficiation / Wet Processing Plant

The Beneficiation / Wet Processing Plant will consist of the following infrastructure:

- Wet Screening.

  The wet screen building is laid out in bays, which are sized to support the wet screens operation will house the following:

  - Feed bins (BN100 – BN600) (**Attachments 2.12 to 2.14**);
  - Bypass bin (BN001) (**Attachments 2.12, 2.14, 2.15 and 2.16**);
  - Bin isolation gates (GAI100 – GAI600 and GAI001) (**Attachments 2.12 and 2.14**);
  - Low profile belt feeders (BF100 – BF600 and BF001) (**Attachments 2.13, 2.14, 2.15 and 2.17**);
  - Pulping box (CH100B – CH600B) (**Attachments 2.13, 2.15, 2.18 and 2.19**);
  - Wet sizing screens (VS100 – VS600) (**Attachments 2.132, 2.17 to 2.21**); and
  - Rougher cyclone feed hoppers and pumps (PU111 – PU611 and PU121 – PU621) (**Attachments 2.13, 2.14 and 2.22**).

  The wet screen feed bins (BN100-BN600) are designed for funnel flow and are fitted with a hydraulically actuated isolation knife gate on the outlet.

  There are six process streams (one for each bin), with each process stream designed with a sprint capacity at the Equipment Design Rate (EDR) to enable the Beneficiation Plant to maintain nominal rate while one stream is offline for modular maintenance.

  In normal operation ore is discharged through the gate and onto the feeder to the pulping chute where it is hit with water deluge to convert the ore to a slurry that can be wet screened to separate the -1 mm particles for further processing. The screen undersize is diluted to 20% weight in weight (w/w) and pumped by two duty pumps per stream to the Cyclone building.

  Trash/mud ball oversize discharge chutes for each of the discharge chutes will reduce the potential for clay ball material and/or trash to report to CV133 (**Attachment 2.10**) and to the fines stockyard (**Attachment 2.3**).

  When modular maintenance is carried out on the offline stream, closing a bin's gate allows the other streams to continue to operate. Sprint capacity during maintenance activities is achieved by enabling the shuttle to "bin-jump" over one bin.

  Where more than one stream is offline the plant configuration will limit shuttle travel (where the bins are consecutive) and will require that material is fed into the bypass bin (BN001) to be returned to the stockyard untreated according to the difference between OHP output and beneficiation plant capacity.

  The bypass bin bay (BN001) is located immediately adjacent to, and at the west end, of the wet screen

feed bins. In order to facilitate online by-pass and subsequent transfer of product to the stockyard, an extended low profile belt feeder is located at the base of the by-pass bin enabling bypass product to be discharged directly onto Conveyor CV131 and eventually to the fines stockyard.

There are no specific dust mitigation measures for this facility as the wet processing (wet screening) mitigates dust emissions.

All drainage from the beneficiation pad reports to centralised surface water drainage from adjacent OHP (**Attachments 2.24 to 2.32**).

Fines Stockyard Drainage will be collected and recycled back to the thickener feed tank (TH901) (**Attachment 2.44**).

- Cyclone Plant.

  The cyclone building houses the:

  - Rougher Cyclones (CY111 – CY611 and CY121 – CY621) (**Attachments 2.36 to 2.48**);
  - Cleaner Cyclones (CY112 – CY612 and CY122 – CY622) (**Attachments 2.37 to 2.49**);
  - Cleaner Cyclone Feed Hoppers (**Attachments 2.48 and 2.49**);
  - Sump Pumps (PU120A/B/C/D) (**Attachment 2.49**); and
  - Belt Filter Feed Tanks (**Attachment 2.37**).

  The Cyclone Plant consists of two Rougher Cyclone clusters, two Cleaner Cyclone clusters and two horizontal belt filters per stream fed from each wet screening module. Each pair of cyclones and filters is designed with sprint capacity above the Design Rate to enable the Beneficiation Plant to maintain nominal rate while one stream is offline for modular maintenance.

  Each pair of Rougher Cyclones are fed from the wet screening building screen undersize hoppers via the duty rougher cyclone feed pumps. Overflow is sampled, then progresses to the tailings thickener feed tank by gravity, and underflow gravity feeds to the Cleaner Cyclone Feed Hopper.

  Each pair of Cleaner Cyclones are each fed from a duty only pump. The Cleaner Cyclone overflow is sampled, then progresses to the tailings thickener feed tank and underflow gravity feeds to the belt filter feed tanks. The Cleaner Cyclone overflow samples flow by gravity to a particle size analyser (PSA) (AR101 – AR601) (**Attachments 2.36 and 2.38**). The PSA uses laser diffraction to determine the size and distribution in the sampled stream and is used to monitor cyclone performance and wear.

  Protection from elevated product moisture being discharged into the stockyard due to poor belt filter performance has been provided by allowing a filter to be shut down and the remaining feed in the upstream cyclones to be bypassed to the neighbouring Cleaner Cyclone Feed Hopper. The Cleaner Cyclone Feed Pumps are sized to handle 150% of the nominal rate to enable them to handle surges caused by this upset condition. There is latent capacity in the Cleaner Cyclone clusters due to designing for commonality with the Rougher Cyclone clusters. The Cleaner Cyclone clusters can process the increased feed rate in this scenario. With feed removed from the filter, and the ore run from the system, the filter is then able to be restarted in a controlled fashion and allowed to stabilise before feed is reintroduced.

- Dewatering Plant.

  The belt filter building includes the following equipment:

  - Feed distributor (**Attachment 2.39**);
  - Vacuum pump (**Attachment 2.40**);
  - Filtrate receiver (**Attachment 2.41**);
  - Filtrate pump (**Attachments 2.39, 2.40 and 2.42**);
  - Belt support blowers (**Attachments 2.39, 2.40 and 2.43**);
  - Cloth wash tank and pump (**Attachments 2.39, 2.40 and 2.42**); and
  - Cloth wash return hopper and pump (**Attachments 2.39 and 2.40**).

  The belt filters are fed by the cleaner cyclone underflow tank and the product discharges on the beneficiation plant product conveyor CV132 (**Attachment 2.11**). Each filter is fitted with three Viper units (**Attachment 2.41**), each consisting of a pair of variable speed drive controlled vibrating rollers. These rollers press down on top of the filter cake with a pre-set pressure to assist in dewatering the cake. A moisture analyser just prior to the cake discharge chute provides feedback on product moisture.

- Filter Product Conveyor CV132 (**Attachment 2.10**).

  While part of the Wet plant this is described under the Dry inflow and Outflow Systems dot point "*Beneficiation Plant Product Conveyor CV133 and Stockyard Feed Conveyor CV134 and Filter Product Conveyor CV132*"

- Thickener

  The tailings facility includes a thickener feed tank (**Attachments 2.44 and 2.45**), single on-ground tailings thickener (TH901) (**Attachments 2.44 to 2.47**), thickener underflow pumps (PU911 – PU913) (**Attachments 2.46 to 2.47**), tailings disposal tank (**Attachment 2.50 and 2.51**) and tailings disposal pumps (**Attachment 2.50 & 2.51**).

  The thickener is fed from a feed tank by launder and underflow is pumped to the Tailings Storage Facilities (TSFs) via the tailings disposal tank and pumps (**Attachment 2.45**).

  The single thickener (TH901) will be 82 m diameter on-ground concrete floor, steel walls and central column, complete with feed well, hydraulic rake, access bridge and all required ancillaries.

  The thickener underflow density is monitored and dilution water added to meet target concentration to the relevant thickener underflow pump suction (PU911 – PU913).

  Thickener overflow (**Attachments 2.2 and 2.44**) shall be by gravity launders to the dirty side of the process water pond and is reused as process water in the beneficiation plant.

  When Thickener inspections or repairs are required, the thickener will be pumped out to tailings, and the settled bed will be washed down using a concrete pump truck style vehicle that can provide high pressure water at a long radius.

5.1.3. Plant Services

The Plant Services will consist of the following infrastructure:

- Raw and Process Water (**Attachments 2.2 and 2.52**)

  The main source of process water will be raw water which will be sourced from the existing Jimblebar site bi-directional raw water pipelines from existing dewatering bores which supply clean water pond PD101 and to Gland Water Tank TK951. Once the raw water has entered the Beneficiation Plant it will be classified as Process Water and is no longer suitable for use as Raw Water. All Process Water will be contained and recycled within the Beneficiation Plant.

  Clean and Dirty Water Ponds

  The 40 ML Beneficiation Plant water storage facility (WSF) consists of two separate ponds: clean water pond PD901 and dirty water pond PD902 which are connected by a weir. The WSF provides 12 hours of plant operation to accommodate periods of maintenance, breakdown or operational requirements. The ponds will be lined and fenced (to prevent stock entry).

  The clean water pond PD901 receives water from the makeup raw water supply and settled water from the dirty water pond PD902, via overflow from the weir.

  Process water from the clean water pond PD901 is pumped into the Beneficiation Plant where it is fed into two manifolds, servicing three process trains each to reduce the likelihood that pump failure does not impact operations. Each pump is sized to supply one stream each and are variable speed drive controlled. The system is controlled to pressure set point with the pump speeds varying to meet the demand. Each stream through the plant draws from the header via control valve to meet end user demand.

  The clean water pond PD101 will also provide:

  - Tailings dilution water to manage density in the tailings line within acceptable limits.
  - Service water for the facilities wash down, drive-in and in-ground sumps (for flushing), and Bulk Ore Conditioning (BOC) to the Beneficiation feed conveyor CV131.
  - Fire water for the Beneficiation Plant Incoming and Outgoing conveyor transfers, Wet Screening building, Desliming building, Thickening area, Process water pumping area, NPI buildings and general yard area.
  - Emergency gland water supply.

  Gland Tank

  The Gland water tank supplies seal water to all the slurry pumps servicing the Beneficiation Plant. The facility is divided into two systems:

  1. The high-pressure system which is dedicated to the tailings pumps. High pressure process water is fed from a dedicated tank and pump set to the wet screen high pressure sprays to

assist with separation and improve screening efficiency. The tank is supplied by low pressure process water.

2. The low-pressure system servicing all other plant slurry pumps and belt filter seals. Low pressure process water is required to slurry fines feed at the sizing screen pulping boxes, for make-up water at the sizing screen hoppers and cleaner cyclone feed hoppers and for tailings disposal slurry dilution. The latter is fed by dedicated tailings dilution pumps.

Flocculant mixing water is also supplied by the gland water pumps.

Raw water is supplied to the Gland Water Tank TK951 where it is pumped through the Gland Water Filters by the Low Pressure Gland Water pumps. In addition to the Wet Screening and Cyclone building slurry pumps, Low Pressure Gland Water is supplied to the Tailings Gland Water Tank. There are two pump systems supplied by this tank: the Thickener underflow pumps from a low-pressure system which has backup power and the high pressure gland water system supplying the tailings pumps alone.

There are three gland water filters, each with a number of cells. Each cell has a self-cleaning drive and automatic valves that are initiated on beck pressure and/or time-based logic to self-clean one at a time, with the remainder staying on line.

Return Process Water

Process water returns from the Beneficiation Plant via the thickener TH901 (**Attachments 2.44**) which overflows to the dirty water pond PD902. This ensures that process water remains clean during plant upset or poor performance of the flocculant or thickener buildings.

- Flocculant Plant

  Flocculant dosing is included to aid in thickening of tailings and belt filter filtration performance and will be supplied to the beneficiation plant in bulk by a B-double type tanker delivering approximately 2 x 20 tonnes of powder per delivery. It will be pneumatically transferred into a 100 m^3 / 70 t storage silo by an on-board blower. This will provide approximately 19 days usage at the plant equipment design rate allowing for supply chain disruptions due to inclement weather and road conditions.

  The flocculant mixing system will consist of a dry flocculant storage silo, three feed screws, wetting systems, mixing tanks, and one storage tank (**Attachments 2.53 to 2.55**). Flocculant will be mixed automatically with gland water on a batch basis to generate a 0.2 – 0.25% weight for weight solution. The flocculant solution will be transferred from the mixing tank to the storage tank. The flocculant solution will be pumped by a dosing pump and diluted with process water to 0.02 - 0.025% for distribution to the tailings thickener (split between the thickener feed box and the feed well). Flocculant will also be pumped to dewatering where 12 off dosing skids will store concentrated flocculant and dose it via dedicated pumps into a dilution line for each filter.

  The flocculant reagent area will be self-bunded and will have a sump pump to aid housekeeping and clean-up.

5.1.4. Tailings Disposal System

The Tailings Disposal System will consist of the following infrastructure:

- Disposal and Decant Pipelines

  The tailings are pumped from the Thickener underflow, through a surge tank and primary arcual sampler to the Tailings Tank. The primary sample feeds a secondary moving pipe sampler, discharging the sample into a rotary sample carousel. The sample rejects from both the primary and secondary samplers discharge to the tailings tank. (**Attachments 2.50 to 2.51**). If required a trim adjustment to target tailings density is made with addition of tailings dilution water to the tailings tank before pumping to one of the IPTSFs.

  The Tailings Disposal Pumps are heavy duty slurry pumps arranged in series. Duty and standby streams are included, 2-duty pumps in series and 2-standby pumps in series (a total of 4-off pumps). The foundation for a third series pump for each stream is to be constructed for future pumping requirements. Emergency backup power is provided for the thickener rake and thickener underflow pumps to enable the rake to continue to rotate, and to recirculate the underflow to prevent consolidation. Gland water is provided from dedicated pumps and tank, this system is, also on emergency backup power.

  Approximately the first five kilometres of pipeline from the beneficiation plant will be DN550 carbon steel pipe. The pipeline then changes to a OD710PE 100 PN25 HDPE pipe, which runs to each of the IPTSFs deposition points (**Attachments 2.56 to 2.74**). There are four tailings containment sumps and a tailings cut-off drain (**Attachments 2.1, 2.56, 2.60, 2.61, 2.64 and 2.67**) along selected portions of

the pipeline route. The sumps are strategically located at low points in the pipe alignment to minimise the potential impact to adjacent watercourses and heritage sites and have a design capacity above the maximum expected static tailings volume, in the highly unlikely event of a tailings spill.

The sumps will also intercept a certain volume of stormwater runoff, until each sump is at capacity, at which time any additional stormwater is discharged into existing flow paths at the sump overflow. The stormwater overflow invert elevation at each sump has been designed at the very least to contain the maximum static tailings spill volume. The facilities have also been positioned/designed to minimise the impacts on existing low points in the terrain to allow the surface runoff from surrounding catchments to follow its natural flow path.

The IPTSFs for the Project are located at Orebody 18's De Grey, and the linked Swan and West Swan pits. Initial deposition at the linked Swan pits will be to Swan pit with the West Swan IPTSF brought on-line at a future date. To maximise storage life tailings deposition will be cycled between the De Grey IPTSF, and Swan IPTSFs approximately every two weeks which will allow for solids to settle and slurry water to be decanted. This will be via manually operated valves at a bifurcation of the tailings pipeline in the IPTSF area.

- In-Pit Tailings Storage Facility

  Together, the De Grey IPTSF and the Swan IPTSFs provide tailings storage for the initial four years of beneficiation plant operations, at an estimated rate of 5.87 mtpa (based on an average of Dales, Joffre and Newman blend into both pits simultaneously).

  Tailings Deposition – General

  Deposition points will be a single discharge location at each pit via the HDPE deposition pipeline (**Figure 2.75**).

  The deposition pipe outlets will extend beyond the existing pit crest or partially down the pit face to facilitate discharge of tailings onto competent material to minimise adverse erosion of the pit slopes.

  Discharge of tailings has been designed to establish a beach slope of 0.5% and assumes a pond depth of 1 m to be developed within the depositional area and up to 20% of tailings beach area to be covered by the pond at each stage of deposition.

  To maximise storage life tailings deposition will be cycled between the De Grey IPTSF, and Swan IPTSFs approximately every two weeks which will allow for solids to settle and slurry water to be decanted. This will be via manually operated valves at a bifurcation of the tailings pipeline in the IPTSF area.

  Tailings Deposition – Swan Pit

  There are two tailings deposition stages for the Swan IPTSF. The initial phase will involve the discharge of approximately 10.77 million m^3 (Mm^3) (8.73 mt) of tailings. The second stage will add a further 11 Mm^3 (8 mt) of tailings.

  The Swan Pit tailings beach has been modelled for each of the two stages with the pond (for water recovery) adjacent to the pit access ramp to allow for safe installation of the associated decant pump. To achieve the predicted final tailings beach profile and pond location at the end of initial filling phase, a total estimated depositional split of approximately 78% from the east and approximately 22% from the west is required (**Attachment 2.76**).

  The expected total settlement within Swan pit is approximately 28 m. and takes approximately 42 years to reach 90% settlement (~FY2093) and about 80 years (~FY2130) to reach total settlement from the end of operations at FY2051 (WSP, 2025b) **Attachment 5D**).

  Tailings Deposition – De Grey Pit

  There are two tailings deposition stages for the De Grey IPTSF. The initial phase will involve the discharge of approximately 13.74 Mm^3 (11 mt) of tailings. The second stage will add a further 9 Mm^3 (6.5 mt) of tailings.

  The De Grey Pit tailings beach has been modelled for each of the two stages with the pond (for water recovery) adjacent to a new pit access ramp to the western side of the IPTSF that will allow safe installation of the associated decant pump. Tailings deposition will occur from the eastern Deposition Point (**Attachment 2.75**) to achieve the predicted final tailings beach profile and pond location at the end of initial filling phase (**Attachment 2.76**).

The De Grey IPTSF will be supported by Interferometric Synthetic Aperture Radar (InSAR) and side scanning radar monitoring systems to monitor the ongoing condition of the pit slopes, to facilitate the safe operation and management of the western access ramp.

The expected total settlement within De Grey pit is approximately 40 m and takes approximately 77 years to reach 90% settlement (~FY2128) and about 150 years (~FY2200) to reach total settlement from the end of operations at FY2051 (WSP, 2025b) **Attachment 5C**).

Decant Water

Decant is achieved at each location using a trailer mounted direct diesel driven pump set, with a floating suction arrangement used to draw the supernatant furthest from the settling solids as possible.

The decant pumping points will be moved as tailings / decant water levels increase over time (**Figure 2.75**). The decant water will then be pumped from the IPTSF overland to the beneficiation plant process water ponds for reuse.

Monitoring Bores

A network of groundwater monitoring bores (**Figure 2.75, Table 3 and Table 4**) have been selected to achieve the following objectives:

Objective 1: Monitor groundwater quality downgradient of IPTSFs and along the flow path to the OB31 dewatering network.

Objective 2: Monitor near pit groundwater level mounding and water quality response / trends, at near pit bores.

Table 3: Groundwater Monitoring

Bore Name	Type	Pathway	Parameter	Monitoring Frequency	
				Commissioning	Operation
EB0258RM	Existing	Swan to OB31	**Groundwater level** Metres below top of bore casing (TOC). **Field water quality** Electrical conductivity (EC), pH, Salinity, Redox and Dissolved oxygen (DO) **Hydrochemistry**[1] EC, pH, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Bicarbonate alkalinity ($HCO3^-$), Total alkalinity, Hardness ($CaCO_3$)., Aluminium (Al), Antimony (Sb), Arsenic (As), Boron (B), Barium (Ba), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Cobalt (Co), Chloride (Cl-), Chromium (Cr), Copper (Cu), Fluorine (F^-), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Nitrate as N ($NO3^-$), Nitrite as N ($NO2^-$), Nitrogen oxides (NOx as N), Nitrogen (Total N), Total Kjeldahl Nitrogen (TKN), Phosphorus (Total P), Potassium (K), Silica (SiO_2), Selenium (Se), Sodium (Na), Strontium (Sr), Sulfate (SO_4^{2-}), Tin (Sn), Titanium (T) , Uranium (U), Vanadium (V), Zinc (Zn).	Quarterly	Quarterly
PM-3	New	Swan to OB31		Quarterly	Quarterly
HEJ0026M	Existing	De Grey to Avon		Quarterly	Quarterly
HMG0120M	Existing	De Grey to OB31		Quarterly	Quarterly
HMG0132M	Existing	De Grey to OB31		Quarterly	Quarterly

[1] Note: Water quality monitoring parameters are for "dissolved ions".

Table 4: Groundwater Monitoring Triggers and Actions

Bore	Parameter	Trigger Value	Reason for Trigger Value	Action
EB0258RM	Depth to groundwater	Depth to groundwater is less than 15 mbgl	Maximum depth for Eucalyptus roots is ~15 mbgl.	1. Investigate potential causes of exceedance of trigger values including a comparison to water levels in the surrounding monitoring bores to identify cause. 2. Implement the actions identified in the investigation.
PM-3				
HEJ0026M				
HMG0120M				
HMG0132M				
EB0258RM	pH	6.0 to 8.5	Based on the Site Specific Trigger Values (SSTVs) developed by Golder, (2015) and HGG (2023).	
PM-3				
HEJ0026M				
HMG0120M				
HMG0132M				
EB0258RM	TDS	800 mg/L	Observed TDS P90 in OB31 aquifer	
PM-3		1,900 mg/L	Predicted P90 for mixed pond and entrained water seepage from Swan IPTSF	
HEJ0026M		1,600 mg/L	Observed TDS P90 in regional aquifer, based on 240 separate TDS observations between 2007 and 2024	
HMG0120M		1,600 mg/L		
HMG0132M		1,600 mg/L		

5.2. Potential Discharges / Emissions and Impacts Associated with the Construction, Commissioning and Time Limited Operations / Operation of the Category 5 Infrastructure

A review of the above infrastructure has identified a number of potential impacts (**Table 5**) associated with each stage and infrastructure type.

Table 5: Potential Impacts associated with the Project

Potential Impact	Infrastructure	Relevant to the Project Stage		
		Construction	Commissioning	TLO / Operations
Dust Increase in dust emissions	Dry Inflow and wet Outflow Systems	**Yes**	**Yes**	**Yes**
	Wet Processing Plant / Plant Services	**Yes**	No	No
	Tailings Disposal System	**Yes**	No	No
Noise Increase in noise emissions	Dry Inflow and Outflow Systems	**Yes**	**Yes**	**Yes**
	Wet Processing Plant / Plant Services	**Yes**	**Yes**	**Yes**
	Tailings Disposal System	**Yes**	No	No
Groundwater Contamination from tailings seepage	Dry Inflow and Outflow Systems	No	No	No
	Wet Processing Plant / Plant Services	No	No	No
	Tailings Disposal System	No	**Yes**	**Yes**
Groundwater Contamination due to a chemical leak	Dry Inflow and Outflow Systems	No	No	No
	Wet Processing Plant / Plant Services	No	**Yes**	**Yes**
	Tailings Disposal System	No	No	No
Surface water Contamination due to a failure of tailings pipeline	Dry Inflow and Outflow Systems	No	No	No
	Wet Processing Plant / Plant Services	No	No	No
	Tailings Disposal System	No	**Yes**	**Yes**
Surface water Contamination due to runoff of sediment laden water	Dry Inflow and Outflow Systems	No	**Yes**	**Yes**
	Wet Processing Plant / Plant Services	No	**Yes**	**Yes**
	Tailings Disposal System	No	No	No
Surface water Contamination due to a chemical leak	Dry Inflow and Outflow Systems	No	**Yes**	**Yes**
	Wet Processing Plant / Plant Services	No	**Yes**	**Yes**
	Tailings Disposal System	No	**Yes**	**Yes**
Flora and Vegetation Clearing of native vegetation	No – Impacts associated with clearing of native vegetation have been assessed under the significant amendment to MS 1126 (Jimblebar Mining Operations). Once approved all clearing activities will be in accordance with the conditions on the new Ministerial Statement.			
Fauna Disturbance of significant fauna	No – Impacts on significant fauna have been assessed under the significant amendment to MS 1126 (Jimblebar Mining Operations). Once approved all clearing activities will be in accordance with the conditions on the new Ministerial Statement.			

Tables 6, 7 and 8 outline a description of each relevant potential discharge/emission, the potential impacts, sensitive receptors, management measures, and residual risk ranking for each project phase (Construction, Commissioning and TLO / Operation) based on the DER (2016) Guidance Statement: Risk Assessments.

Note that a detailed risk assessment for the IPTSF is provided in *Conceptual Exposure Model Definition Phase Study, Jimblebar Beneficiation Project* (WSP, 2025).

Table 6: Construction of the 45 mtpa Beneficiation Plant Environmental Impact Assessment and Associated Management Strategies

Risk Event						Management Measures	Residual Risk Ranking (Consequence / Likelihood)
Sources / Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Category 5 Processing or beneficiation of metallic or non-metallic ore	Dry Inflow and Outflow System.	Dust	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity — visible dust leaving the facility. Impact on air quality (PM_{10} and $PM_{2.5}$) at Newman and Sylvania homestead	Localised dust is likely to be generated during clearing / movement of material during construction. Construction dust will be managed by: • Minimising the clearing footprint; and • Using water carts to control dust from exposed areas.	**Low (Minor, Rare)** The separation distances between the construction footprint and sensitive receptors, combined with the proposed dust management measures and the relatively short term nature of the clearing activities mean that it is very unlikely that dust generated during construction will impact on the Newman airshed.
		Noise			Impact on amenity at Newman and Sylvania homestead	Localised noise is likely to be generated during clearing / movement of material during construction. No specific noise management measures are proposed given the separation distance between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub).	**Low (Slight, Rare)** The separation distances between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub) mean that it is unlikely for noise generated at the facility to impact on the Town of Newman or Sylvania homestead.
	Beneficiation / Wet Processing Plant and Plant Services.	Dust	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity — visible dust leaving the facility. Impact on air quality (PM_{10} and $PM_{2.5}$) at Newman and Sylvania homestead	Localised dust is likely to be generated during clearing / movement of material during construction. Construction dust will be managed by: • Minimising the clearing footprint; and • Using water carts to control dust from exposed areas.	**Low (Minor, Rare)** The separation distances between the construction footprint and sensitive receptors, combined with the proposed dust management measures and the relatively short term nature of the clearing activities mean that it is very unlikely that dust generated during construction will impact on the Newman airshed.
		Noise			Impact on amenity at Newman and Sylvania homestead	Localised noise is likely to be generated during clearing / movement of material during construction. No specific noise management measures are proposed given the separation distance between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub).	**Low (Slight, Rare)** The separation distances between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub) mean that it is unlikely for noise generated at the facility to impact on the Town of Newman or Sylvania homestead.
	Tailings Disposal System.	Dust	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity — visible dust leaving the facility. Impact on air quality (PM_{10} and $PM_{2.5}$) at Newman and Sylvania homestead	Localised dust is likely to be generated during clearing of the pipeline route and minor modifications for pit access at Orebody 18. Construction dust will be managed by: • Minimising the clearing footprint; and • Using water carts to control dust from exposed areas.	**Low (Minor, Rare)** The separation distances between the construction footprint and sensitive receptors, combined with the proposed dust management measures and the relatively short term nature of the clearing activities mean that it is very unlikely that dust generated during construction will impact on the Newman airshed.
		Noise			Impact on amenity at Newman and Sylvania homestead	Localised noise is likely to be generated during clearing / movement of material during construction. No specific noise management measures are proposed given the separation distance between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub).	**Low (Slight, Rare)** The separation distances between the sensitive receptors, the short term nature of the works, and the location of the activities within mining areas (Jimblebar Hub) mean that it is unlikely for noise generated at the facility to impact on the Town of Newman or Sylvania homestead.

Table 7: Commissioning of the 45 mtpa Beneficiation Plant Environmental Impact Assessment and Associated Management Strategies

Risk Event						Management Measures	Residual Risk Ranking (Consequence / Likelihood)
Sources / Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Category 5 Processing or beneficiation of metallic or non-metallic ore	Commissioning of the Dry Inflow and Outflow System.	Dust	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity — visible dust leaving the Application Area. Impact on air quality (PM_{10} and $PM_{2.5}$) at Newman	The existing Jimblebar stockyard dust mitigation measures will continue to be the main source of dust management at the stockyards. These include stockyard cannons and ore conditioning sprays. The Beneficiation Plant Feed Conveyor CV131 will be fitted with ploughs, scrapers, skirt modules, dust hoods, and bulk ore conditioning sprays to manage dust. Where new infrastructure is constructed the following measures have been undertaken to minimise dust generation: • Enclosed transfer points. • Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The separation distance between the sensitive receptors and the Jimblebar Stockyards, combined with the existing and proposed dust management measures mean that while it is possible for dust generated at the facility to impact on the Newman airshed the overall impact will be slight.
		Noise			Impact on amenity at Newman and Sylvania homestead	No specific noise mitigation measures are required for the dry inflow and outflow facilities, however the following sound material handing designs will be implemented to minimise noise from the facility: • Enclosed transfer points. • Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The proposed noise management measures and the large separation distances mean that it is unlikely for noise generated at the facility to significantly impact on the sensitive receptors.
		Sediment laden water	Minor drainage lines which feed to Jimblebar Creek	Stockyard stormwater runoff containing sediments.	Impact on vegetation health. Sedimentation of creeks and waterways.	The broader Jimblebar stockyard has been designed to prevent the run-off off sediment laden water. In addition to the existing controls a drainage system will be installed below the fines stockpile in the stockyard to remove water that percolates through the stockpile to the base layer. This system will include drainage channels below the sacrificial layer, consisting of a combination of permeable media and slotted drainage pipes, draining to a collection point at the eastern end of the stockyard. From there, the collected water will be pumped back to the Beneficiation Plant and returned to the process.	**Low (Slight Rare)** The existing controls prevent sediment laden water from exiting the stockyards. In addition the new drainage system for the fines stockpile will capture and remove water from the stockpile preventing the risk of water building up and potentially discharging from the facility.
	Commissioning of the Beneficiation / Wet Processing Plant and Plant Services.	Noise	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity at Newman and Sylvania homestead	The following noise mitigation measures will be installed at the wet plant: • Vacuum pumps for belt filters have silencers installed. • Air compressors are encased in enclosures. • Enclosed transfer points. • Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The proposed noise management measures and the large separation distances mean that it is unlikely for noise generated at the facility to significantly impact on the sensitive receptors.
		Discharge of chemicals and/or hydrocarbons	Groundwater Ethel Gorge TEC located >5 km west of the facility.	Spills, infiltration and/or stormwater containing chemicals and/or hydrocarbons	Reduction in groundwater quality Impact to stygofauna habitat	The following measures will be implemented to manage the risk of chemicals, hydrocarbons and sediment from entering the surrounding environment. • The flocculant reagent area will be self-bunded and will have a sump pump to aid housekeeping and clean-up; • The thickener will be a concrete design to prevent infiltration; and • Hydrocarbon storage areas will be bunded and any spills will be cleaned-up. • All drives will be located over concrete bunded slabs with sumps. • All drainage from the beneficiation plant pad reports to centralised surface water drainage from adjacent OHP.	**Medium (Minor, Unlikely)** The management measures make it unlikely that any contaminates would reach groundwater under the wet plant. In the event that this did occur any contamination would be localised. Given distance to the Ethel gorge TEC and the inert nature of the flocculant any spills would be unlikely to result in a significant impact the groundwater quality of stygofauna habitat.
			Surface water including minor drainage lines which feed to Jimblebar Creek		Impact on vegetation health.		**Low (Slight Rare)** The existing controls prevent potentially contaminated water from exiting the facility area. In addition, the spill control measures make it very unlikely that water in the broader facility could become contaminated.
		Sediment laden water	Surface water including minor drainage lines which feed to Jimblebar Creek	Stormwater runoff containing sediments.	Loss of vegetation Sedimentation of creeks and waterways.		**Low (Slight Rare)** The plant will feed into the existing surface water controls which have been designed to prevent potentially sediment laden water from exiting the facility area.
	Commissioning of the Tailings Disposal System	Contamination from tailings seepage	Groundwater Ethel Gorge TEC located >5 km west of the facility.	Seepage from in-pit tailings storage	Reduction in groundwater quality Impact to stygofauna habitat	The only specific management measure to be implemented is the neutralisation of the water within the De Grey pit prior to discharge commencing (WSP, 2025b). Commissioning will result in minimal discharge to the Swan and De Grey Pits. Discharge of tailings during commissioning is not expected to alter surrounding groundwater as • Acidic water in the De Grey pit will be neutralised before tailings discharge to the pit. • Acidic conditions are not predicted to occur at the Swan Pit for the duration of the project. • Discharge to the pit will be marginally fresh water and evaporation is not expected to occur at any significant level during commissioning. • There is limited connectivity to the surrounding aquifers and the associated Ethel Gorge TEC.	**Medium (Minor, Unlikely)** Deposition of tailings into the De Grey and Swan pits is unlikely to impact on surrounding groundwater quality given the limited connectivity of the regional aquifers and the quality of the water discharged to the pits.

Risk Event						Management Measures	Residual Risk Ranking (Consequence / Likelihood)
Sources / Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
						• Groundwater monitoring (**Table 3**) will be undertaken to identify any trends in groundwater depth and quality associated with the facility. Five key monitoring bores (**Table 4**) have associated trigger values and specific actions to be undertaken in the event a trigger value is reached.	

		Contamination due to a failure of tailings pipeline	Surface water including minor drainage lines which feed to Jimblebar Creek	Tailings discharge from a ruptured pipeline	Loss of vegetation
					Sedimentation of creeks and waterways.
					Chemical contamination of creeks and waterways.
						The tailings pipeline will be constructed and commissioned to ensure that the pipeline is built according to approved engineering designs and standards inclusive of construction verification certification.
						Pipeline design:
						• has considered factors such as:
						  ○ pressure;
						  ○ temperature;
						  ○ the nature of the transported materials
						  ○ location of tailings containment sumps and tailings cut-off drains; and
						  ○ associated road alignments to reduce potential vehicle interactions.
						• rating exceeds maximum pressure output from pumping infrastructure.
						• avoids areas susceptible to natural hazards (flooding), where practicable.
						The above design requirements will be confirmed as being in place in the Project's Compliance Reports (Critical Containment Infrastructure Report and Environmental Compliance Report) and the Environmental Commissioning Report.
						During commissioning the pipeline will be monitored to detect potential natural hazards (flooding), which would trigger the need for a manual shutdown of the pipeline.
						Comprehensive maintenance procedures that include routine checks, testing, and servicing of the tailings line will be implemented. This will include data analytics to assess the pipeline's condition and performance trends, aiding in predictive maintenance and risk management.
						Potential pipeline leaks will be identified by:
						• An automated monitoring systems which continuously tracks the pipeline's performance and provide real-time alerts and shutdown in the event an anomaly is detected.
						• Regular inspections and testing during the construction and commissioning process to identify and rectify any errors or deficiencies
						In the event of a pipe rupture:
						• The automated emergency shutdown system will engage to prevent any further discharge. This system will be triggered by abnormal conditions (e.g. a flow meter discrepancy).
						• Any areas impacted by a tailings leak will be assessed and remediated by removing the discharged tailings solids from impacted area.
							Low (Slight, Unlikely)
							A spill from the tailings pipeline is considered to be unlikely. Should this event occur the facility has been designed with four tailings containment sumps each with a capacity above the maximum expected tailings volume.

Table 8: Time Limited Operations / Operation of the 45 mtpa Beneficiation Plant Environmental Impact Assessment and Associated Management Strategies

Risk Event						Management Measures	Residual Risk Ranking (Consequence / Likelihood)
Sources / Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Category 5 Processing or beneficiation of metallic or non-metallic ore	TLO / Operation of the Dry Inflow and Outflow System.	Dust	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity — visible dust leaving the Application Area. Impact on air quality (PM_{10} and $PM_{2.5}$) at Newman	The existing Jimblebar stockyard dust mitigation measures will continue to be the main source of dust management at the stockyards. These include stockyard cannons and ore conditioning sprays. The Beneficiation Plant Feed Conveyor CV131 will be fitted with ploughs, scrapers, skirt modules, dust hoods, and bulk ore conditioning sprays to manage dust. Where new infrastructure is constructed the following measures have been undertaken to minimise dust generation: • Enclosed transfer points. Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The separation distance between the sensitive receptors and the Jimblebar Stockyards, combined with the existing and proposed dust management measures mean that while it is possible for dust generated at the facility to impact on the Newman airshed the overall impact will be slight.
		Noise			Impact on amenity at Newman and Sylvania homestead	No specific noise mitigation measures are required for the dry inflow and outflow facilities, however the following sound material handing designs will be implemented to minimise noise from the facility: • Enclosed transfer points. • Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The proposed noise management measures and the large separation distances mean that it is unlikely for noise generated at the facility to significantly impact on the sensitive receptors.
		Sediment laden water	Minor drainage lines which feed to Jimblebar Creek	Stockyard stormwater runoff containing sediments.	Impact on vegetation health. Sedimentation of creeks and waterways.	The broader Jimblebar stockyard has been designed to prevent the run-off off sediment laden water. In addition to the existing controls a drainage system will be installed below the fines stockpile in the stockyard to remove water that percolates through the stockpile to the base layer. This system will include drainage channels below the sacrificial layer, consisting of a combination of permeable media and slotted drainage pipes, draining to a collection point at the eastern end of the stockyard. From there, the collected water will be pumped back to the Beneficiation Plant and returned to the process.	**Low (Slight Rare)** The existing controls prevent sediment laden water from exiting the stockyards. In addition the new drainage system for the fines stockpile will capture and remove water from the stockpile preventing the risk of water building up and potentially discharging from the facility.
	TLO / Operation of the Beneficiation / Wet Processing Plant and Plant Services.	Noise	Town of Newman >30 km east of the facility. Sylvania homestead >24 km east of the facility.	Air / wind dispersion	Impact on amenity at Newman and Sylvania homestead	The following noise mitigation measures will be installed at the wet plant: • Vacuum pumps for belt filters have silencers installed. • Air compressors are encased in enclosures. • Enclosed transfer points. • Reduced height of transfer points and speed of falling ore (reducing concertina effect reduces dust).	**Low (Slight, Rare)** The proposed noise management measures and the large separation distances mean that it is unlikely for noise generated at the facility to significantly impact on the sensitive receptors.
		Discharge of chemicals and/or hydrocarbons	Groundwater Ethel Gorge TEC located >5 km west of the facility.	Spills, infiltration and/or stormwater containing chemicals and/or hydrocarbons	Reduction in groundwater quality Impact to stygofauna habitat	The following measures will be implemented to manage the risk of chemicals, hydrocarbons and sediment from entering the surrounding environment. • The flocculant reagent area will be self-bunded and will have a sump pump to aid housekeeping and clean-up; • The thickener will be a concrete design to prevent infiltration; and • Hydrocarbon storage areas will be bunded and any spills will be cleaned-up. • All drives will be located over concrete bunded slabs with sumps. • All drainage from the beneficiation plant pad reports to centralised surface water drainage from adjacent OHP.	**Medium (Minor, Unlikely)** The management measures make it unlikely that any contaminates would reach groundwater under the wet plant. In the event that this did occur any contamination would be localised. Given distance to the Ethel Gorge TEC and the inert nature of the flocculant any spills would be unlikely to result in a significant impact the groundwater quality of stygofauna habitat.
			Surface water including minor drainage lines which feed to Jimblebar Creek		Impact on vegetation health.		**Low (Slight Rare)** The existing controls prevent potentially contaminated water from exiting the facility area. In addition, the spill control measures make it very unlikely that water in the broader facility could become contaminated.
		Sediment laden water	Surface water including minor drainage lines which feed to Jimblebar Creek	Stormwater runoff containing sediments.	Loss of vegetation Sedimentation of creeks and waterways.		**Low (Slight Rare)** The plant will feed into the existing surface water controls which have been designed to prevent potentially sediment laden water from exiting the facility area.
	TLO / Operation of the Tailings Disposal System	Contamination from tailings seepage	Groundwater Ethel Gorge TEC located >5 km west of the facility.	Seepage from in-pit tailings storage	Reduction in groundwater quality Impact to stygofauna habitat	Operational discharge of tailings during is not expected to alter surrounding groundwater as • Acidic water in the De Grey pit will be neutralised before tailings discharge commences to the pit (WSP, 2025b). • Acidic conditions are not predicted to occur at the Swan Pit for the duration of the project. • Discharge to the pit will be marginally fresh water and evaporation is not expected to occur at any significant level during commissioning. • There is limited connectivity to the surrounding aquifers and the associated Ethel Gorge TEC. • Groundwater monitoring (**Table 3**) will be undertaken to identify any trends in groundwater depth and quality associated with the facility. Five key monitoring bores (**Table 4**) have associated trigger values and specific actions to be undertaken in the event a trigger value is reached.	

Risk Event						Management Measures	Residual Risk Ranking (Consequence / Likelihood)
Sources / Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
		Contamination due to a failure of tailings pipeline	Surface water including minor drainage lines which feed to Jimblebar Creek	Tailings discharge from a ruptured pipeline	Loss of vegetation Sedimentation of creeks and waterways. Chemical contamination of creeks and waterways.	The tailings pipeline will be verified to have been constructed and commissioned according to approved engineering designs. The pipeline will be monitoring to detect potential natural hazards and the which would trigger the need for a manual shutdown of the pipeline. Comprehensive maintenance procedures that include routine checks, testing, and servicing of the tailings line will be implemented. This includes data analytics to assess the pipeline's condition and performance trends, aiding in predictive maintenance and risk management. Potential pipeline leaks will be identified by: • An automated monitoring systems which continuously tracks the pipeline's performance and provide real-time alerts and shutdown in the event an anomaly is detected. • Regular inspections to identify and rectify any errors or deficiencies In the event of a pipe rupture: • The automated emergency shutdown system will engage to prevent any further discharge. This system will be triggered by abnormal conditions (e.g. a flow meter discrepancy). • Any areas impacted by a tailings leak will be assessed and remediated by removing the discharged tailings solids from impacted area.	**Low (Slight, Unlikely)** A spill from the tailings pipeline is considered to be unlikely. Should this event occur the facility has been designed with four tailings containment sumps each with a capacity above the maximum expected tailings volume level.

6. Other Infrastructure to be Constructed – Environmental Impact Assessment and Associated Management Strategies

The following infrastructure will also be constructed as part of the Project, but does not trigger a Category in Schedule 1 of the (EP Regs):

- Concrete Batching Plant; and
- Substation and powerline upgrades.

6.1. Concrete Batching Plant

A mobile concrete batching plant will be required to support the construction of the Beneficiation Plant. This plant does not trigger the need for an approval under the EP Act as the batch plant will be established within the works approval Application Area and no material will be taken off site.

Based on the separation distances to the town of Newman and the limited onsite operation (output is approximately 65 m^3/h.), the potential dust and noise impacts associated with the facility has been determined to have an overall risk of Low (Slight, Unlikely).

6.2. Substation and Powerline Upgrades

An upgrade of the Jimblebar Substation is required to support the Beneficiation Project. These upgrades include:

- An expansion of the 132 kV switchyard to include a fourth bay and fourth transformer;
- An additional 33 kV switch room; and
- A new 33 kV underground ring main.

These upgrades do not trigger the need for an approval under the EP Act as they do not relate to a Category of Schedule 1 of the *Environmental Protection Regulations 1987* And will not alter emissions from the premises.

7. Heritage

Land Access Unit is responsible for ensuring that BHP complies with the *Aboriginal Heritage Act*, *1972*, and all other state and federal heritage legislation. All land disturbance activities are subject to ethnographic and archaeological surveys as part of an internal PEAHR. The PEAHR process ensures that all heritage sites in the vicinity of the Application Area are identified and avoided where practicable.

The Application Area falls within the Nyiyaparli Native Title Claim (WC05/6). Archaeological and ethnographic surveys of the proposed Application Area have been undertaken by BHP and a number of heritage sites have been identified. All heritage sites will be avoided, however if any heritage site cannot practicably be avoided, BHP would consult the relevant traditional owners and seek approval under the *Aboriginal Heritage Act*, *1972* before the site is disturbed.

8. Conclusion

The proposed activities for the development of the Jimblebar Beneficiation Plant and In-Pit Tailings Storage Facilities are unlikely to introduce unacceptable emissions or discharges to land, water and air. The level of risk associated with each type of impact is believed to be low enough not to cause impacts to nearby sensitive receptors (human or environmental).

9. References

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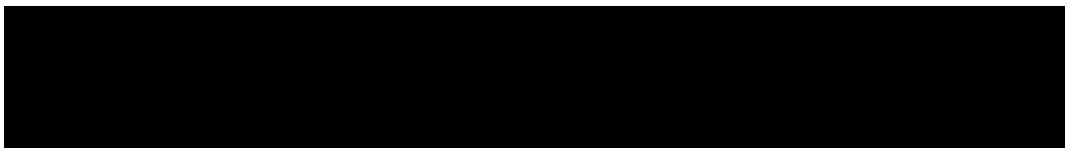
WSP (2025b) *De Grey and Swan In-Pit Tailings Storage Facility Water Quality Modelling*. Unpublished report for BHP Iron Ore Pty Ltd.

WSP (2025c) *Conceptual Exposure Model Definition Phase Study, Jimblebar Beneficiation Project*. Unpublished report for BHP Iron Ore Pty Ltd.

WSP (2024) *Consolidation Modelling Update at De Grey and Swan Pits*. Unpublished report for BHP Iron Ore Pty Ltd.



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Attachment 2.1: Figure 1: Jimblebar Beneficiation Works Approval Premises Facilities and Location (JIM_008WA_001_RevD_0)

Attachment 2.2: Ore Handling – Beneficiation Plant – General Arrangement (Drawing 170-G-00001)

Attachment 2.3: Ore Handling – Jimblebar Plant Arrangement – Jimblebar Hub – General Arrangement (Drawing 960-M-12005)

Attachment 2.4: Ore Handling – Beneficiation Plant – Conveyors – 131 Plan and Elevation Sheet 1 (Drawing 171-M-00025)

Attachment 2.5: Ore Handling – Beneficiation Plant – Conveyors – 131 Plan and Elevation Sheet 2 (Drawing 171-M-00026)

Attachment 2.6: Ore Handling – Beneficiation Plant – Conveyors – 131 Plan and Elevation Sheet 3 (Drawing 171-M-00027)

Attachment 2.7: Ore Handling – Beneficiation Plant – Conveyors – 134 Plan and Elevation Sheet 1 (Drawing 171-M-00082/A)

Attachment 2.8: Ore Handling – Beneficiation Plant – Conveyors – 134 Plan and Elevation Sheet 1 (Drawing 171-M-00083/A)

Attachment 2.9: Stockyard drainage

Attachment 2.10: Ore Handling – Beneficiation Plant – Conveyors – 133 Plan and Elevation (Drawing 171-M-00052)

Attachment 2.11: Ore Handling – Beneficiation Plant – Conveyors – 132 Plan and Elevation (Drawing 171-M-000152)

Attachment 2.12: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 6 (Drawing 172-M-00006)

Attachment 2.13: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Elevations Sheet 2 (Drawing 172-M-00008)

Attachment 2.14: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Elevations Sheet 4 (Drawing 172-M-00010)

Attachment 2.15: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 5 (Drawing 172-M-00005)

Attachment 2.16: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Elevations Sheet 1 (Drawing 172-M-00007)

Attachment 2.17: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 3 (Drawing 172-M-00003)

Attachment 2.18: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 4 (Drawing 172-M-00004)

Attachment 2.19: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Elevation Sheet 3 (Drawing 172-M-00009)

Attachment 2.20: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 2 (Drawing 172-M-00002)

Attachment 2.21: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 5 (Drawing 172-M-00005)

Attachment 2.22: Ore Handling – Beneficiation Plant – Wet Screening Building – BG201 – Arrangement Plans Sheet 1 (Drawing 172-M-00001)

Attachment 2.23: Beneficiation Plant Drainage Layout

Attachment 2.24 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Layout (Drawing 170-C-00002)

Attachment 2.25 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 1 (Drawing 170-C-00003)

Attachment 2.26 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 2 (Drawing 170-C-00004)

Attachment 2.27 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 3 (Drawing 170-C-00005)

Attachment 2.28 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 4 (Drawing 170-C-00006)

Attachment 2.29 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 5 (Drawing 170-C-00007)

Attachment 2.30 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 6 (Drawing 170-C-00008)

Attachment 2.31 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 7 (Drawing 170-C-00009)

Attachment 2.32 Ore Handling - Beneficiation Plant - Civil Works - Plant Earthworks - General Arrangement - Sheet 8 (Drawing 170-C-00010)

Attachment 2.33 Ore Handling - Beneficiation Plant - Civil Works - Stockyard Drainage - Layout - Fines Stockpile - Sheet 1 (Drawing 170-C-00047)

Attachment 2.34 Ore Handling - Beneficiation Plant - Civil Works - Stockyard Drainage - Layout - Fines Stockpile - Sheet 2 (Drawing 170-C-00048)

Attachment 2.35 Ore Handling - Beneficiation Plant - Civil Works - Stockyard Drainage - Drainage Sections and Details (Drawing 170-C-00049)

Attachment 2.36: Ore Handling – Beneficiation Plant – Desliming Facility Cyclone Building BG202 – Plan at RL571.125 and RL575.725 (Drawing 173-M-00002)

Attachment 2.37: Ore Handling – Beneficiation Plant – Desliming Facility Cyclone Building BG202 – Plan at RL578.175 and RL580.925 (Drawing 173-M-00003)

Attachment 2.38: Ore Handling – Beneficiation Plant – Desliming Facility Cyclone Building BG202 – Elevations Sheet 2 (Drawing 173-M-00005)

Attachment 2.39: Ore Handling – Beneficiation Plant – Dewatering Plant Dewatering Building BG203 – Plan at Ground Level (Drawing 174-M-00001)

Attachment 2.40: Ore Handling – Beneficiation Plant – Dewatering Plant Dewatering Building BG203 – Elevations Sheet 1 (Drawing 174-M-00003)

Attachment 2.41: Ore Handling – Beneficiation Plant – Dewatering Plant Dewatering Building BG203 – Plan at RL 571.225 (Drawing 174-M-00002)

Attachment 2.42: Ore Handling – Beneficiation Plant – Dewatering Plant Dewatering Building BG203 – Elevations Sheet 2 (Drawing 174-M-00004)

Attachment 2.43: Ore Handling – Beneficiation Plant – Dewatering Plant Dewatering Building BG203 – Elevations Sheet 3 (Drawing 174-M-00005)

Attachment 2.44: Ore Handling – Beneficiation Plant – Thickeners Thickener Area Building BG204 – General Arrangements Plan (Drawing 176-M-00001)

Attachment 2.45: Ore Handling – Beneficiation Plant – Thickeners Thickener Area Building BG204 – Elevations (Drawing 176-M-00002)

Attachment 2.46: Ore Handling – Beneficiation Plant – Thickeners Thickener Vault –Plan and Elevation (Drawing 176-M-00003)

Attachment 2.47: Ore Handling – Beneficiation Plant – Thickeners Thickener Vault – Elevation and Section (Drawing 176-M-00004)

Attachment 2.48: Ore Handling – Beneficiation Plant – Desliming Facility Cyclone Building BG202 – Elevations Sheet 1 (Drawing 173-M-00004)

Attachment 2.49: Ore Handling – Beneficiation Plant – Desliming Facility Cyclone Building BG202 – Plan at Ground Level and RL568.125 (Drawing 173-M-00001)

Attachment 2.50 Ore Handling - Beneficiation Plant - Tailings - Tailings Pumping - General Arrangement - Plans (Drawing 178-M-00002)

Attachment 2.51 Ore Handling - Beneficiation Plant - Tailings - Tailings Pumping - General Arrangement - Elevations (Drawing 178-M-00003)

Attachment 2.52: Ore Handling – Beneficiation Plant – Plan Services – Water, Process Water – General Arrangement Plan (Drawing 177-M-00001)

Attachment 2.53: Ore Handling – Beneficiation Plant – Plant Services Flocculant Plant – General Arrangement Sheet 1 of 3 (Drawing 177-M-01400)

Attachment 2.54: Ore Handling – Beneficiation Plant – Plant Services Flocculant Plant – General Arrangement Sheet 2 of 3 (Drawing 177-M-01401)

Attachment 2.55: Ore Handling – Beneficiation Plant – Plant Services Flocculant Plant – General Arrangement Sheet 3 of 3 (Drawing 177-M-01402)

Attachment 2.56: Ore Handling – Beneficiation Plant – Civil Works – Tailings and Decant Pipelines –Arrangement Plan Part V Approval (Drawing 178-M-00149A)

Attachment 2.57: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System – Site Arrangement Plan (Drawing 178-M-00005)

Attachment 2.58: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 1 of 17 (Drawing 178-M-00500)

Attachment 2.59: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 2 of 17 (Drawing 178-M-00501)

Attachment 2.60: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 3 of 17 (Drawing 178-M-00502)

Attachment 2.61: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 4 of 17 (Drawing 178-M-00503)

Attachment 2.62: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 5 of 17 (Drawing 178-M-00504)

Attachment 2.63: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 6 of 17 (Drawing 178-M-00505)

Attachment 2.64: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 7 of 17 (Drawing 178-M-00506)

Attachment 2.65: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 8 of 17 (Drawing 178-M-00507)

Attachment 2.66: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 9 of 17 (Drawing 178-M-00508)

Attachment 2.67: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 10 of 17 (Drawing 178-M-00509)

Attachment 2.68: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 11 of 17 (Drawing 178-M-00510)

Attachment 2.69: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 12 of 17 (Drawing 178-M-00511)

Attachment 2.70: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 13 of 17 (Drawing 178-M-00512)

Attachment 2.71: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 14 of 17 (Drawing 178-M-00513)

Attachment 2.72: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 15 of 17 (Drawing 178-M-00514)

Attachment 2.73: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 16 of 17 (Drawing 178-M-00515)

Attachment 2.74: Ore Handling – Beneficiation Plant – Tailing Disposal Line – Tailings and Decant System –Plan Sheet 17 of 17 (Drawing 178-M-00516)

Attachment 2.75 Jimblebar Beneficiation Plant Works Approval – In Pit Tailings Storage Facilities (JIM_008WA_002_RevC_0)

Attachment 2.76: Predicted final tailings beach and pond locations

Attachment 2.77: Works Approval Boundary Coordinates

The coordinates of the Application Area are provided below in GDA 2020 MGA51.

Easting	Northing
201555.87	7418932.83
201773.93	7418929.80
202506.02	7417492.50
199290.80	7415697.75
199481.51	7415082.03
199500.82	7414753.71
199413.92	7414425.40
199394.60	7414155.02
199713.26	7414077.76
200369.90	7413517.69
200727.19	7413479.06
200833.82	7413360.85
201378.31	7413366.21
201386.54	7413198.86
200930.48	7412601.00
200547.50	7412417.31
199943.70	7412529.91
199933.38	7413141.46
199976.87	7413485.60
199848.46	7413672.19
199558.76	7413894.29
199249.76	7414019.83
199162.85	7414164.67
199288.38	7414724.75
199240.10	7415072.38
198940.91	7415827.35
196921.36	7416112.29
196810.54	7416384.30
197958.70	7417021.69
198295.82	7418070.52
198432.58	7418162.23
201566.96	7418233.53

Attachment 3A: Environmental commissioning management plan

Attachment 3Ab: Environmental commissioning execution plan

Attachment 3B: Proposed activities

See Sections 1 to 9.

Attachment 3C: Map of Area Proposed to be cleared

Not required

Attachment 3D: Additional information for clearing assessment

Not required

Attachment 4: Marine surveys (only applicable if marine surveys included in application)

Not required

Attachment 5A: Other Approvals: *Wheelarra Hill (Jimblebar) Environmental Licence L5415/1988/09*

Attachment 5B: ***Studies to support In-Pit TSF for the Definition Phase Study of the Jimblebar Beneficiation Study – Groundwater Assessment*** **(WSP, 2025a)**

Attachment 5C: *Consolidation Modelling Update at De Grey and Swan Pits* (WSP, 2025b)

Attachment 5D: ***Conceptual Exposure Model Definition Phase Study, Jimblebar Beneficiation Project*** **(WSP, 2025c)**

Attachment 6A: Emissions and discharges

See Sections 1 to 9.

Attachment 6B: Waste acceptance

See Sections 1 to 9.

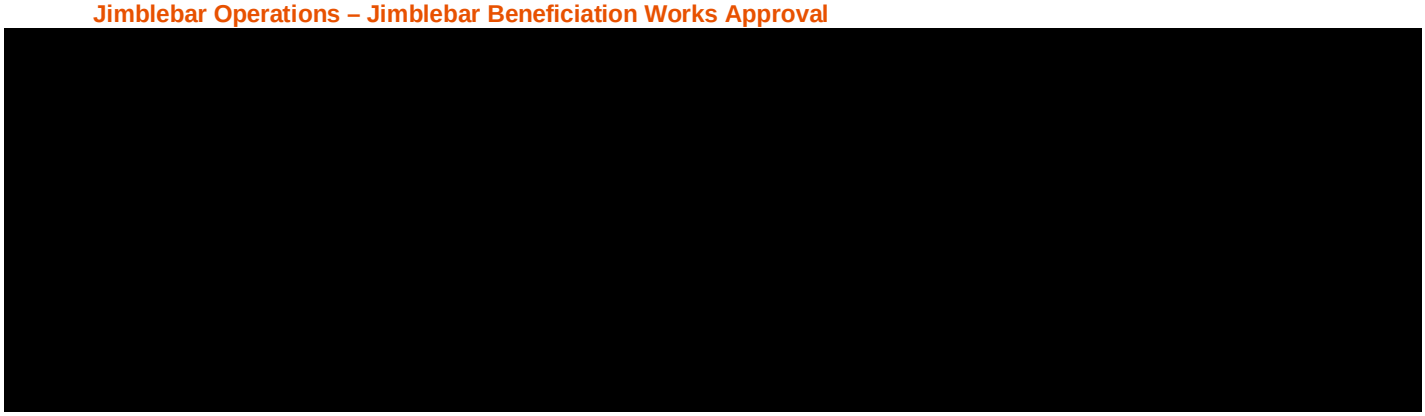
Attachment 7: Siting and location

See Attachment 2.1.

Attachment 8: Supporting document

See Sections 1 to 9.

Attachment 9: Category-specific checklist(s) – Tailings storage facilities



Attachment 11: Request for exemption from publication Submission of application

Not Required.