



27 June 2022

*DWEW REF: DWERT8888*

*Assessment number 2320*

Environmental Protection Authority  
Department of Water and Environmental Regulations –Services  
Prime House, 8 Davidson Terrace, Joondalup DC, WA 6027

Attention: Matthew Tonts – Environmental Protection Authority Chair

Copy: Troy Sinclair - Assistant Director | North WA Section

Dear Matthew,

**Ashburton Infrastructure Project – Notice requiring Information for Assessment – Revised s38 Referral and RSD V1**

Please find Mineral Resources Limited's (MinRes) revised response to Environmental Protection Authority's (EPA's), notice requiring information for assessment issued in your letter dated 14 March 2022 (Notice Requiring Information for Assessment – Ashburton Infrastructure Project - Section 40(2)(a) Notice Requiring Information for Assessment).

MinRes confirms that we have reviewed and addressed EPA's request for additional via our responses to queries within in the table below, which includes references to where addition information has been provided within the revised s38 Referral form, Referral Supporting Document (RSD V1) and supporting addendums and appendices.

Once EPA have determined that MinRes' revised s38 Referral including RSD V1 and supporting addendums and appendices is adequate, MinRes understands that EPA will commence the assessment process, including a two week public release period of revised documentation.

Should you require any further information on the AIP Response to or the responses to additional information assessment discussed in the tables below, please feel free to contact Sarah Osborne on (08) 9315 8590 or myself on (08) 9329 3407.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "L. Purves".

Les Purves

General Manager - Environment, Approvals, Land Access  
**Mineral Resources Limited**

**Table 1: Additional information requested for Assessment 2320 - Ashburton Infrastructure Project**

Reference	DWER Comment	MRL Response	RSD V1 Updates
<b>Flora and Vegetation</b>			
	General	Revised structure of RSD to address movements of some factors from Other Factors to be Key Environmental Factors requiring their own Section within the RSD have revised the Flora and Vegetation Chapter from <b>Section 7</b> to <b>Section 9</b>	<b>Section 9</b>
1.1	Surveys for the whole Development Envelope as the development footprint is indicative only. Potential impacts to the entire development envelope need to be further considered. For example, the Southern deviation west of Red Hill Creek does not appear to have been surveyed (as shown in maps K and L of Appendix P).	<p>MinRes acknowledged the survey gap in the previous version of the RSD, which was due to access constraints.</p> <p>Surveys for the whole Haul Road Development Envelope (DE) have now been completed, and results from all surveys have been included within the updated version of the s38 RSD. All surveys have been undertaken in accordance with technical guidance for detailed flora and vegetation surveys (EPA 2016a), technical guidance for terrestrial vertebrate fauna surveys (EPA 2020). The results of the additional surveys are provided below.</p> <p><u>Flora and Vegetation Assessment</u></p> <ul style="list-style-type: none"> <li>No Threatened Ecological Communities or Priority Ecological Communities were recorded during the survey.</li> <li>The number of conservation significant flora species recorded is currently being finalised and will be included in the revised RSD V1 (see <b>Section 9.3.3.1</b>).</li> </ul> <p>The impacts to conservation significant flora species is discussed further in the response to <b>Reference 1.3</b> below and within <b>Section 9.4</b> and <b>Section 9.6</b> of the revised RSD V1.</p>	<b>Section 9.2, Table 9-2, Section 9.3.2.3, Table 9-5, Table 9-7, Section 9.3.3, Table 9-8, Table 9-9, Section 9.3.4.2, Section 9.4.1.1, Table 9-11, Table 9-12, Table 9-13, Table 9-14, Table 9-16, Section 9.4.1.3, Section 9.6, Section 9.7</b>
1.2	Details of potential impacts to <i>Owenia acidula</i> (P3 species) in unsurveyed areas of the haul road development envelope and indirect impacts for populations that could be adjacent to the development envelope. Several known populations occur close to the development envelope in the area of maps K and L of Appendix P and southeast of Telephone Bore.	All areas of the Haul Road DE have now been surveyed, and results of the surveys will be discussed in the <b>Section 9.6.3</b> of the RSD V1, including any potential direct impacts to <i>Owenia acidula</i> . Potential indirect impacts to populations of <i>Owenia acidula</i> are discussed in MinRes' response to <b>Reference 1.3</b> below.	<b>Section 9.6.3</b>
1.3	The potential for direct and indirect impacts (such as changes to drainage patterns) and the cumulative impacts of other developments on <i>O. acidula</i> , and other conservation significant species.	<p>As detailed above, potential direct impacts to conservation flora species, including <i>Owenia acidula</i>, will be discussed further in the <b>Section 9.3.3.1, Section 9.4.1.3</b> and <b>Section 9.6.3.1</b>, RSD V1. Mitigation measures will be applied to ensure the Proposal does not result in significant impacts to these conservation flora species.</p> <p>Potential indirect impacts to populations of <i>Owenia acidula</i> and other conservation significance flora species have been identified as degradation of vegetation due to:</p> <ul style="list-style-type: none"> <li>Fragmentation;</li> <li>Altered hydrological regimes;</li> <li>Introduction and/or spread of weed species; and</li> <li>Increased dust deposition.</li> </ul> <p>These indirect impacts are considered consistent with the impacts that will be included in <b>Section 9.6</b> and <b>Section 9.6.3.1</b> of the revised RSD V1. The potential for indirect impacts will be managed and is not expected to result in the loss of conservation significant species. Key mitigation measures associated with these potential impacts include:</p> <ul style="list-style-type: none"> <li>A Site Disturbance Permit Procedure (SDPP), which will be used for all land clearing activities to avoid any clearing occurring outside of the Haul Road DE.</li> <li>Ensuring vegetation clearing will be kept to the minimum amount required, as far as practicable.</li> </ul>	<b>Section 9.3.3.1, Table 9-8, Section 9.4.1.3, Table 9-14, Section 9.6, Section 9.6.3.1, Figure 9-46</b>

Reference	DWER Comment	MRL Response	RSD V1 Updates
		<ul style="list-style-type: none"> <li>• Any planned disturbance to watercourses shall be completed during dry, non-flow periods to minimise environmental impacts, where possible.</li> <li>• Installing and maintaining engineering controls and water management structures (e.g., culverts, bridges and burrows) as part of the Proposal design to maintain hydrological regimes, capture and infiltrate rainfall, minimise the degradation of water quality by sedimentation, erosion or chemical pollutants.</li> <li>• Implementation of strict hygiene procedures to prevent the spread of current weeds, introduction of new or additional populations of weed species in the Haul Road DE, including ensuring equipment is cleaned and inspected prior to use, undertaking weed mapping throughout the Haul Road DE prior to construction activities and annual weed monitoring.</li> <li>• Ensuring the Haul Road will be sealed upon completion of construction, so dust will only be an issue during construction phase of the Proposal.</li> <li>• Implementation of dust controls during construction, including minimising vegetation clearing, grubbing and earthworks during high winds, minimising the amount of clearing by only clearing areas required, undertaking progressive clearing of the haul road and utilising dust suppression equipment such as water carts.</li> </ul> <p>Based on the above, the Proponent considers that the EPA objective for Flora and Vegetation can be met.</p> <p>Potential cumulative impacts from the Proposal to conservation significant flora species are associated with the clearing of Priority flora species. The impacts to Priority flora from Projects that are located within 50 km of the Haul Road DE have been used to assess cumulative impacts. Cumulative impacts to Priority flora species will be discussed in <b>Section 9.6.3</b> of the revised RSD.</p>	
<b>Terrestrial Fauna</b>			
	<p>General</p>	<p>Revised structure of RSD to address movements of some factors from Other Factors to be Key Environmental Factors requiring their own Section within the RSD have revised the Terrestrial Fauna Chapter from Section 8 to <b>Section 10</b>.</p> <p>MinRes acknowledged the survey gap in the previous version of the RSD, which was due to access constraints.</p> <p>Surveys for the whole Haul Road Development Envelope (DE) have now been completed, and results from all surveys have been included within the updated version of the s38 RSD. All surveys have been undertaken in accordance with technical guidance for terrestrial vertebrate fauna surveys (EPA 2020) and technical guidance for short-range endemic invertebrate fauna (EPA 2016a, where possible). The results of the additional surveys are provided below.</p> <p><u>Vertebrate Fauna and Short-Range Endemic Invertebrate Fauna Assessment</u></p> <ul style="list-style-type: none"> <li>• Three conservation significant fauna taxa were recorded within the Survey Area during the fauna surveys: <ul style="list-style-type: none"> <li>○ Northern Quoll (<i>Dasyurus hallucatus</i>)- were recorded within the stony hills and slopes habitat in the Survey Area. No potential denning habitat was recorded in the additional survey area.</li> <li>○ Pilbara Leaf-nosed Bat (<i>Rhinonicteris aurantia Pilbara form</i>) - One call was recorded by an Autonomous Recording Unit within the drainage line/river/creek habitat in the Survey Area. This record is consistent with known roost sites outside the Survey Area. No roosting was recorded within the Survey Area.</li> <li>○ Long-tailed Dunnart (<i>Sminthopsis longicaudata</i>) - An individual was recorded by camera trap within the stony hills and slopes habitat in the Survey Area.</li> </ul> </li> <li>• Three conservation significant fauna taxa were considered to have a high likelihood of occurring within the Haul Road Development Envelope and Indicative Footprint during the fauna surveys: <ul style="list-style-type: none"> <li>○ Ghost Bat (<i>Macroderma gigas</i>);</li> <li>○ Western Pebble-mound Mouse (<i>Pseudomys chapmani</i>); and</li> <li>○ Pilbara Olive Python (<i>Liasis olivaceus barroni</i>).</li> </ul> </li> </ul>	<p><b>Section 10</b></p> <p><b>Section 10.3.1, Table 10-2, Section 10.3, Section 10.4, Section 10.5, Section 10.6, Section 10.7</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates
		<p>Based on the result of the additional survey the impacts to terrestrial fauna are considered consistent with the impacts that will be described in <b>Section 10.3</b> of the RSD.</p>	
2.1	<p>Potential impacts and mitigation of haul road operations on terrestrial fauna</p>	<p>During operations, truck movements will occur on a 24-hours, seven days a week basis. The Terrestrial Fauna section of the RSD V1 (<b>Section 10</b>) will be updated to discuss the impacts and mitigation measures associated with the operation of the Haul Road. Potential impacts from operation of the Haul Road include:</p> <ul style="list-style-type: none"> <li>• Fragmentation of fauna habitat, limiting fauna access and movement;</li> <li>• Fauna mortality and injury (Direct);</li> <li>• Species disturbance associated with increased dust, noise or light (Indirect);</li> <li>• Habitat degradation due to anthropogenic disturbance, introduction or spread of weeds, increase in feral predators and altered fire regimes (Indirect); and</li> <li>• Habitat degradation due to erosion, sedimentation or altered hydrological regimes (Indirect).</li> </ul> <p>In addition to the above, the previously submitted Haul Road Terrestrial Construction Environmental Management Plan (TCEMP) has been updated to a Haul Road Terrestrial Environmental Management (TEMP), which now includes operational mitigation measures for the Haul Road. Key mitigation measures within the TEMP include:</p> <ul style="list-style-type: none"> <li>• The final design of the Haul Road will be largely flat.</li> <li>• Investigating the use of underpasses and/or overpasses by Northern Quolls and install in high value habitat areas (near Mesa and Breakaway habitat) if they are deemed suitable to allow MNES species to disperse between habitats within the Haul Road DE.</li> <li>• Cattle underpasses will also be installed, which can also be used by MNES for dispersal. The final locations and numbers of cattle underpasses will be determined in consultation with relevant pastoralists.</li> <li>• Installing a plain wire cattle fence along the whole length of the Haul Road to prevent cattle from crossing the road. This is an essential element for road safety. The fence will be designed to enable native fauna to pass through and/or above. In particular, space will be maintained underneath the lowest fence strand to allow ground-dwelling wildlife (i.e., Northern Quolls) to move under the fence.</li> <li>• Barbed wire fencing would only be considered as a contingency action if based on ongoing monitoring there is substantial risk of collision from cattle pushing through non-barbed fencing or if it is required under third party obligations. This would only be considered in areas that have a low to very low interaction with Bats (i.e., west of Red Hill Creek) (Bat Call 2022). If barbed wire is deemed necessary, it will be installed with suitable bat deflectors to minimise the risk of collision.</li> <li>• Limiting the speed limit of the Haul Road to 80 km/hr at all times and limiting the speed limit of the access road to 80 km/hr at night during operation, reducing the risk of collision with MNES species.</li> <li>• Implementing a monitoring program in higher risk collision areas (such as near Mesa and Breakaway habitat and east of Red Hill Creek). If the fence or vehicles movements are seen to be causing significant injury or mortality, contingency actions will be</li> </ul>	<p><b>Section 10.4, Section 10.5, Section 10.6</b></p> <p><b>TEMP (Appendix G)</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates
		<p>implemented, which could include further driver education, signage, installing reflectors on the fence and reducing speed limits at night in high-risk areas.</p> <ul style="list-style-type: none"> <li>Once the Proposal has been constructed, the Haul Road and adjacent access road will be sealed, reducing the risk of increased dust. Disturbed areas (including borrow pits) will be progressively rehabilitated in accordance with the Closure Strategy.</li> <li>Maintenance activities along the Haul Road have the potential to create dust, however these activities are expected to be localised to the immediate area of maintenance, and only occur for a short period of time. Dust suppression techniques, such as misting sprays, will be used as required during maintenance activities.</li> <li>Noise and vibrations are expected to remain restricted and temporary along the relatively narrow dimensions of the Haul Road. Predicted noise levels at sensitive receptors, from haul trucks operating along the Haul Road are predicted to comply with the assigned levels under the <i>Environmental Protection (Noise) Regulations 1997</i> at all times (LGA 2021).</li> <li>Ensuring lighting is only installed at critical intersections, with the majority of the Haul Road being unlit during operation. Where required, lighting will be directed towards the sealed Haul Road using targeted asymmetrical distribution to illuminate specific areas of need, and all lights will be mounted at a height as low as possible and will only use the minimum number and intensity of lights needed to provide safe and secure illumination.</li> <li>All vehicles will be inspected for weeds and pests prior to entering or exiting the site during operation.</li> <li>Undertaking weed management as required to ensure that weed species' extent and cover do not increase compared to baseline, including targeted control of any occurrences of the two declared weed species, <i>Parkinsonia aculeata</i> and <i>Prosopis pallida</i>, already present in the Haul Road DE.</li> <li>All employees and contractors will be inducted on appropriate fauna management including the location of sensitive habitats, the ban of domestic animals on site, the impacts of artificial lighting and impacts of incorrect disposal of waste to native fauna, and the importance of ensuring no activities occur outside the works zone through clear delineation of the works area.</li> <li>The Proponent has designed the Haul Road and associated infrastructure to avoid and, where not possible, minimise impacts to surface water regimes. Proposed engineering controls and water management structures (i.e., culverts, bridges, and burrows) will be installed to ensure natural hydrological regimes are maintained for the majority of conditions, but particularly during low (base) and receding flows, and to minimise the degradation of water quality by sedimentation, erosion or chemical pollutants.</li> <li>Once the Haul Road is constructed, the Proponent will also monitor rainfall and water levels (including tidal) at selected locations within intertidal and claypan habitats adjacent to the Haul Road (noting that the claypans are rainfall-dependent and not typically connected to the intertidal regime).</li> </ul> <p>Based on the assessment of potential impacts and proposed mitigation measures to protect environmental values associated with terrestrial fauna provided in the revised RSD and TEMP, the Proponent considers that the EPA objective for this factor can be met.</p>	
2.2	As the haul road passes through habitat for Northern quoll, Ghost bat, Pilbara leaf nosed bat and Pilbara olive python, the impacts of the proposal on Terrestrial Fauna have not been clearly characterised. For each significant species, the additional impact of the proposal on habitat should be stated in both amount and percentage in a table.	A revised table ( <b>Table 10-13</b> and <b>Table 10-17</b> ) will be included within the RSD V1 to provide clarification on the additional impact to the habitat for each significant species as an amount and percentage.	<b>Table 10-13, Table 10-17</b>
<b>Inland Waters</b>			
	General	<p>Inland Waters moved from Other Factors (Section 11-4 in original RSD) to being a Key Environmental Chapter (<b>Section 11</b>) as determine by the EPA Level of Assessment Decision (LoA).</p> <p>The following sections have been included to update the information on Inland Waters from Other Factors Section Structure to meet requirements of the Key Environmental Factors Section within the RSD:</p>	<p><b>Section 11</b></p> <p><b>Section 11.2, Section 11.3, Section 11.4, Section 11.5, Section 11.6, Section 11.7</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates
		<ul style="list-style-type: none"> <li>• Addition of <b>Section 11.2:</b> Inland Waters Policy Guidance for Marine Environmental Quality;</li> <li>• Updates to <b>Section 11.3:</b> Detailed description of Inland Waters studies and survey findings and inclusion of revised modelling outcomes for BCH.</li> <li>• Addition of <b>Section 11.4</b> including the expansion of direct and indirect impacts identification and discussions for consultation and operations in the following specific sections:                             <ul style="list-style-type: none"> <li>o <b>Section 11.4.1</b> Direct Impacts;</li> <li>o <b>Section 11.4.1</b> Indirect Impacts;</li> <li>o <b>Section 11.4.3</b> Cumulative Impacts; and</li> </ul> </li> <li>• Updates to <b>Section 11.5</b> including overview of management plans required to mitigate impacts to Inland Waters.</li> <li>• Addition of <b>Section 11.6</b> detailed discussion around the assessment of significance of residual impacts to Inland Waters.</li> <li>• Addition of <b>Section 11.7</b> summarised the Environmental Outcomes of the Proposal on Inland Waters.</li> </ul>	
3.1	Impacts on flood risk from haul road on the Onslow floodplain in relation to access and impacts on operations to other facilities such as to Onslow Salt and Wheatstone Accommodation Village.	Inundation modelling (BG&E 2021) of the area has been used to inform the design and placement of culverts beneath the proposed Haul Road to convey flows and achieve the outcome of no discernible change in inundation levels. The proposed development does not impact 100-year ARI design flood levels at the Port facility and along the Wheatstone Access Road, where flood levels are governed by coastal events (BG&E 2021). Based on this there is not expected to be any significant impacts from flood risk to operations of other facilities in the area as a result of this Proposal.	<b>Section 10.6.2.3, Section 11.3.1, Section 11.4.1.1, Section 11.5, Section 11.6.1</b>
3.2	Details of construction and operation of the haul road could impact existing access to other infrastructure.	<p>The Proponent has designed the Haul Road and associated infrastructure to avoid and, where not possible, minimise impacts to surface water regimes. Proposed engineering controls and water management structures (i.e., culverts and bridges) will be installed to convey flows and maintain hydrological regimes up to 10% AEP. Crossing will be designed to overtop in extreme flood events. All Proposal infrastructure will be designed so that existing access to other infrastructure is not affected even in extreme flood events. This potential impact was not addressed in the previous RSD and will be included in the revised RSD.</p> <p>As described above, inundation modelling (BG&amp;E 2021) of the area has been used to inform the design and placement of culverts beneath the proposed Haul Road to achieve the outcome of no discernible change in inundation levels.</p>	<b>Section 11.4</b>
3.3	Detail if Priority 1 Drinking Water Supply areas, (Cane River and Bungaroo Creek Water Reserves) and pastoral bores which could be impacted by water abstraction, construction activities and/or ongoing operational impacts.	<p>The Haul Road DE is located entirely within the Pilbara groundwater area, which is proclaimed under the <i>Rights in Water Irrigation Act 1914</i> (RiWI Act). Accordingly, the installation of groundwater bores and abstraction of groundwater will require licenses and permits under the RiWI Act that will ensure no other users are impacted. Groundwater abstraction will only be required during construction and therefore will be of short duration, which further minimises the potential to affect other uses.</p> <p>The dominant regional land uses along the Haul Road alignments are currently mining and cattle grazing. There are existing pastoral, mining and drinking water supply groundwater bores along the proposed Haul Road. Production bores within Priority 1 Drinking Water Supply areas, such as the Cane River Water Reserve, have a 500 m wellhead protection zone established, to protect the source of water used for abstraction and potable supply. Pastoral bores have a 400 m wellhead exclusion zone established under the <i>WA Mining Act 1978</i> (Mining Act).</p> <p>During construction it is expected that up to four Turkeys Nests will be operational at any one time, abstracting approximately 6 to 12 L/sec from each Turkeys Nest. Therefore, a maximum of 48 L/sec is expected to be abstracted during construction. No abstraction will occur during operational phases, with water only required for construction of the Haul Road. Production bores will be installed in accordance with Drinking Water Supply Area Protection Zones and Exclusion Zones for Pastoral Bores under the Mining Act. Therefore, no impact will occur to Water Supply Areas or Pastoral Bores is expected by the Proposal.</p> <p>The relevant section of the Inland Waters chapter within the revised RSD will be updated to reflect discussion above to provide clarity within the document.</p>	<b>Section 2.3.1</b> <b>Section 11.5, Section 11.6.2</b>

**Social Surroundings**

Reference	DWER Comment	MRL Response	RSD V1 Updates
	General	Revised structure of RSD to address movements of some factors from Other Factors to be Key Environmental Factors requiring their own Section within the RSD have revised the Social Surroundings Chapter from <b>Section 10</b> to <b>Section 14</b> .	<b>Section 14</b>
4.1	Details of dust and noise risks and mitigation in regard to Onslow Salt ponds and Wheatstone Accommodation Camp.	<p>The Air Quality and Social Surrounds chapter of the revised RSD has been updated to provide further clarity on dust risk to the Onslow Salt Ponds and Wheatstone Accommodation Camp, and the Social Surrounds chapter has been updated to provide further clarity on noise risk to the Onslow Salt Ponds and Wheatstone Accommodation Camp. The additional information is described below.</p> <p><u>Dust</u></p> <p><i>Haul Road DE</i></p> <p>The Onslow Salt Evaporation Ponds are approximately 3 km northwest of the Haul Road DE, and the Wheatstone Accommodation Camp (Camp) for the Chevron Fly-In Fly-Out workforce is approximately 4 km west of the Haul Road DE. During Haul Road construction, vegetation clearing, earthwork activities and potential wind erosion, along with vehicle and equipment movement within the Haul Road DE are expected to be the main dust generating activities. The construction activities are considered temporary, lasting for a relatively short period of time. The separation distance between the Haul Road DE, the Onslow Salt Evaporation Ponds and the Camp is expected to provide a degree of buffering that reduces the likelihood for construction dust settling on the ponds or at the Camp and creating a nuisance or amenity impact. In addition to this, the Proponent has incorporated a set of dust management and mitigation controls that will be applied through design, construction and operation of the project that will be detailed in <b>Section 13.2.5</b> of the RSD. The actions, when implemented, further reduce the risk for TSP and dust deposition. The haul road will be fully sealed, which will significantly avoid the generation of airborne dust during operation. Fugitive dust emissions from haul trucks during operation will also be minimised by ensuring all loads are covered. Therefore, the operation of the Haul Road is unlikely to significant increase dust emissions at the Onslow Salt Evaporation Ponds or Camp.</p> <p><i>Landside DE</i></p> <p>The Onslow Salt Evaporation Ponds are located approximately 3.5 km to the southeast of the proposed Landside DE. The Camp is located approximately 10 km to 11 km to the south-southeast of the Landside DE. The separation distance between the Landside DE, and the Onslow Salt Evaporation Ponds and the Camp is expected to provide a degree of buffering that reduces the likelihood for construction and operation dust settling on the Onslow Salt Evaporation Ponds or at the Camp and creating a nuisance or amenity impact.</p> <p>There is no clearing or earthworks proposed in the Landside DE as part of this Proposal minimising the potential for dust. The construction activities that have the potential to result in dust emissions (i.e., potential wind erosion, along with vehicle and equipment movement) are considered temporary, lasting for a relatively short period. In addition to this, the Proponent has incorporated a set of dust management and mitigation controls that will be applied through design and construction of the project and will be detailed in <b>Section 13.2.5</b> of the RSD. The actions, when implemented, further reduce the risk for TSP and dust deposition during construction.</p> <p>Dispersion modelling was undertaken for the operation phase of the Proposal at the Port. At the Proposal's estimated maximum tonnage handling (40 Mtpa) the results of the dispersion modelling for the Onslow Salt Evaporation Ponds and Camp receptors were:</p> <ul style="list-style-type: none"> <li>• Dust deposition across the Onslow Salt Evaporation Ponds and Camp was shown to remain below the criteria adopted for dust deposition (2g/m<sup>2</sup>/month); and</li> <li>• the TSP across the Onslow Salt Evaporation Ponds and Camp was shown to remain below the 24-hour average criteria adopted for TSP (DWER, 2019).</li> </ul> <p>In addition to this, the Proponent has incorporated a set of dust management and mitigation controls that will be applied through operation of the Proposal and will be detailed in <b>Section 13.2.5</b> of the RSD. The actions, when implemented, further reduce the risk for TSP and dust deposition. In addition to this, the Proponent will install an ambient air quality (particulate) monitoring program with a real-time monitor being placed in the vicinity of the Onslow Salt Evaporation Ponds and the Camp to ensure the no exceedances of model predictions. The accessibility to near real-time data will inform the Proponent's dust management and mitigation response to any measured dust levels of concern.</p> <p>With the Proposal's modelled predictions at Onslow Salt Evaporation Ponds and at the Camp remaining lower than the relevant criteria for TSP and dust deposition, this indicates that the dust control designed and incorporated into the Proposal, when implemented, are an appropriate approach to dust mitigation and management.</p>	<b>Table 14-2, Section 14.2.5, Table 14-5</b>

Reference	DWER Comment	MRL Response	RSD V1 Updates																						
		<p>Based on the assessment of potential impacts and proposed mitigation measures to protect environmental values associated with Air Quality and Social Surrounds, the Proponent considers that the EPA objective for these factors associated with dust can be met.</p> <p><u>Noise</u></p> <p>The Camp is located on industrially zoned land and looks to have a significant laydown area attached to it, therefore has been categorised as Industrial under <i>Schedule 1, Part A(8)</i> of the <i>Environmental Protection (Noise) Regulations 1997</i> “<i>caretaker’s and like residences attached to or forming part of the premises referred to in this Part</i>”. The Onslow Salt Evaporation Ponds has also been categorised as Industrial. This categorisation has an assigned level of 65 dB LA10 for all times of the day. Should it be deemed that the Camp does not form part of an industrial use and is a ‘noise sensitive premises: highly sensitive area’, the influencing factor and therefore the assigned level, can be determined based on local government land use maps.</p> <p>The Camp is located within the Ashburton North Strategic Industrial Area and based on this land zoning the calculation of the influencing factor is shown in the table below. The most critical time period in terms of compliance with regulations would be the night period, and the allowable noise levels under the regulations during this time is 35 dB LA10 + influencing factor. Using the influencing factor in the table below the allowable level during this time period would be 55 dB LA10.</p> <table border="1" data-bbox="845 743 2421 894"> <thead> <tr> <th>Receiver</th> <th>Description</th> <th>Within 100 metre radius</th> <th>Within 450 metre radius</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Camp</td> <td>Industrial land</td> <td>100%</td> <td>100%</td> <td>20</td> </tr> <tr> <td>Commercial land</td> <td>0%</td> <td>0%</td> <td>0 d</td> </tr> <tr> <td>Transport Factor</td> <td></td> <td></td> <td>0 d</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>20</td> </tr> </tbody> </table> <p>A noise assessment was undertaken to determine noise emissions from both the construction and operation of the Haul Road and the Landside facilities. A summary of the results of this assessment is provided below.</p> <ul style="list-style-type: none"> <li>The predicted noise levels from the construction of the Haul Road are predicted to comply with the assigned levels for ‘Industrial Use’ for the Camp and Onslow Salt Evaporation Ponds, under the Regulations at all times. Furthermore, the predicted noise LA10 DB at the Camp is 47, which would also be under the assigned level under the Regulations if the Camp was deemed a ‘noise sensitive premises: highly sensitive area.</li> <li>To assess the noise emissions from the operation of the Haul Road, noise measurements of trucks using the haul road for the MRL Koolyanobbing mine site was undertaken, which is considered similar to the expected noise from the Proposal. The predicted noise levels from the operation of the Haul Road are predicted to comply with the assigned levels for ‘industrial use’ for the Camp and Onslow Salt Evaporation Ponds, under the Regulations at all times. Furthermore, the predicted noise LA10 DB at the Camp is 36, which would also be under the assigned level under the Regulations if the Camp was deemed a ‘noise sensitive premises: highly sensitive area.</li> <li>The predicted noise level from the construction of the Landside facility are predicted to comply with the assigned levels for ‘industrial use’ for the Camp and Onslow Salt Evaporation Ponds, under the Regulations at all times. Furthermore, the predicted noise LA10 DB at the Camp is below 25, which would also be under the assigned level under the Regulations if the Camp was deemed a ‘noise sensitive premises: highly sensitive area.</li> <li>The predicted noise level from the operation of the Landside facility is predicted to comply with the assigned levels for ‘Industrial Use’ for the Camp and Onslow Salt Evaporation Ponds, under the Regulations at all times. Furthermore, the predicted noise LA10 DB at the Camp is below 25, which would also be under the assigned level under the Regulations if the Camp was deemed a ‘noise sensitive premises: highly sensitive area.</li> </ul> <p>Although the Proposal is predicted to always comply with the assigned levels under the Regulations, mitigation measures for noise will be included in the TEMP and will be summarised in <b>Section 12.4</b> of the RSD.</p> <p>Based on the assessment of potential impacts associated with Social Surrounds, the Proponent considers that the EPA objective for this factor can be met in relation to noise.</p>	Receiver	Description	Within 100 metre radius	Within 450 metre radius	Total	Camp	Industrial land	100%	100%	20	Commercial land	0%	0%	0 d	Transport Factor			0 d	Total			20	
Receiver	Description	Within 100 metre radius	Within 450 metre radius	Total																					
Camp	Industrial land	100%	100%	20																					
	Commercial land	0%	0%	0 d																					
	Transport Factor			0 d																					
	Total			20																					
4.2	Evidence of consultation with neighbours of the proposed haul road and ongoing access.	<b>Section 4</b> of the RSD V1 has been updated to detail the consultation that has occurred with neighbours of the proposed Haul Road. In addition, there are no longer any pastoral leaseholder restrictions.	<b>Section 4, Table 4-2</b>																						

Reference	DWER Comment	MRL Response	RSD V1 Updates
4.3	Confirmation of consultation with and agreement from PPA that they are aware of the level of risk to changes in coastal processes and that they are willing to undertake mitigation via existing management plans/ approvals via MS 1031.	<b>Table 4-2</b> of the RSD V1 has been updated to detail the consultation that has occurred with PPA for the AIP as a Project. Including the level of risk to changes in coastal processes that they are willing to undertake mitigation via existing management plans/ approvals via MS 1031.	<b>Table 4-2</b>
4.4	Evidence of consultation with the traditional owner groups.	<b>Table 4-2</b> and <b>Section 13.2.2.2</b> of the RSD will be updated to detail the consultation that has occurred with traditional owner groups of the proposed Haul Road.	<b>Table 4-2 Section 13.2.2.</b>
<b>Marine Fauna</b>			
	General	Revised structure of RSD to address movements of some factors from Other Factors to be Key Environmental Factors requiring their own Section within the RSD have revised the Marine Fauna Chapter from Section 6 to <b>Section 8</b> .	<b>Section 8</b>
5.1	Risks associated with changes to construction schedule impacting on sensitive periods such as whale migration season.	<p>MinRes engaged O2 Marine to undertake revised dredge plume modelling for the revised construction schedule (Q4 to Q1). Outcomes of the revised dredge plume modelling have been incorporated into revised BCH mapping and revised EIA and is presented within RSD V1 in <b>Section 6</b> and <b>Section 8</b>.</p> <p>The RSD V2 has been updated to include additional information on underwater noise management <b>Table 8-7, Table 8-7, Table 8-8, Table 8-11, Table 8-12, Table 8-13</b> and <b>Figure 8-7-1</b>. An Underwater Noise Management Protocol (UNMP) has also been developed and included as <b>Appendix G</b> within the RSDV1.</p> <p><b>Section 8.6.1</b> has been updated to address construction Impacts (Direct) in underwater noise from piling and dredging activities, light pollution during construction, injury from vessel strike and <b>Section 8.6.3</b> Operational Impacts (Direct) in injury from vessel strike within the RSD V1.</p> <p>Outcomes of a revised EIA, of the updated construction schedule include the following risk of impacts and mitigation measures on marine fauna:</p> <ul style="list-style-type: none"> <li>• A number of strategies will be employed to avoid or mitigate potential risks. These are described in the Marine Construction Environmental Management Plan (MCEMP) and Underwater Noise Management Protocol (UNMP). In particular, piling will be undertaken to avoid the southern Humpback Whale migration period when cow-calf pairs may be present. Trained marine observers will be used and works shut down in accordance with the Protocol and dedicated exclusion and observation zones.</li> <li>• Impacts associated with noise (particularly piling, during the construction phase) are manageable and temporary, with a <b>low risk</b> of cumulative impact.</li> <li>• Artificial lighting may affect nesting turtle beaches in the absence of mitigation measures. Habitat areas directly and indirectly impacted do not support or otherwise provide important habitat for listed MNES, except for offshore breeding habitat for three species of marine turtles on Thevenard Island. An Artificial Light Management Plan (ALMP) will be implemented to mitigate impacts, including monitoring of hatchling orientation on Thevenard and other islands, Based on light modelling, impacts are expected to be low.</li> <li>• The Proposed Action's DEs overlap with a small portion of a number of biologically important areas (BIAs). There are several confirmed habitats in proximity to the Proposed Action the Department of the Environment and Energy (DoEE now DAWE) (2013) criteria for critical habitat species: Flatback Turtle; Green Turtle, Hawksbill Turtle and Loggerhead Turtle. These species, apart from the Loggerhead Turtle, have recorded nesting on beaches in the Proposed Action area. Loggerhead Turtles nests further to the south and critical nesting/internesting habitat is not present.</li> <li>• The addition of shipping activities during construction and operations within and surrounding the Proposed Action area are considered to be low when compared with shipping activities within the greater North West, WA region. The Proposed Action will not significantly increase the risk of cumulative impacts from vessel strikes on marine MNES species.</li> </ul> <p>Based on the assessment of potential impacts and proposed mitigation measures to protect environmental values associated with marine fauna provided in the revised RSD, MCEMP and DSDMP, the Proponent considers that the EPA objective for this factor can be met.</p>	<p><b>Section 6, Section 6.3.3, Figure 6-1, Figure 6-2, Figure 6-3, Section 8.4.1, Section 8.6.1</b></p> <p><b>Table 8-7, Table 8-7, Table 8-8, Table 8-11, Table 8-12, Table 8-13, Figure 8-7-1</b></p> <p>UNMP (<b>Appendix G</b>)</p> <p><b>Section 8.6.1, Section 8.6.3.</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates											
5.2	Hydrodynamic modelling simulation for periods for construction operations other than mid-March to mid-June if there are changes to construction schedule	<p>MinRes engaged O2 Marine to model a new set of parameters that had been defined for the proposed dredge program. These new parameters included a shortening of the dredge period from 90 to 50-days achieved through 24-hour/day operations. MinRes also revised the dredge and bulked disposal volumes to 135,000 m<sup>3</sup> (in-situ dredging) and 165,000 m<sup>3</sup> (bulked disposed material), respectively. The longer daily operations meant larger barges would need to be considered which, in turn, lead to a reduction in barge disposal frequency.</p> <p>Importantly, MinRes revised the start of the dredging campaign to December of 2022. Borehole data and a geotechnical investigation report from the dredging site also became available post submission of the original O2 Marine dredge plume modelling report, this new information allowed for significant increase in confidence of the assumed particle size distribution (PSD) adopted in the dredge plume model, which was previously based only on surficial sediment samples.</p> <p>The updates to the dredging program and revised dredging period, in addition to new information regarding the dredge material composition, warranted a revision to the dredge plume modelling study. The revised dredge plume study report will be appended to the revised RSD and the revise RSD will be updated to reflect the outcomes of the revised study.</p> <p>Opportunistically, O2 Marine improved some of the modelling assumptions and methodologies adopted in simulating the previous dredge program, which will be described within the revised RSD and supporting technical reports. Within RSD V1, <b>Figure 6-3</b> showing the predicted Zones of High and Moderate Impact from dredging based has been updated to present outcomes of new modelling. <b>Table 8-11</b> has been updated from new modelling, values from bare substrate updated. <b>Section 8.4.1.4, Section 8.4.1.5</b> and <b>Section 8.5</b> outing revised outcomes of impact assessment from new modelling results has also been updated within the RSD V1.</p> <p>The primary objective of the revised dredge plume study was to conduct dredge plume modelling for the MinRes AIP and provide zones of impact and a zone of influence to satisfy the requirements of environmental impact assessment, based on the updated dredging program (Q4 2022 to Q1 2023). This revision also strived to improve upon previous dredge plume modelling submissions through the availability of new geotechnical information and a review of previous assumptions and methodologies, thus increasing confidence in zones of impact for environmental impact assessment. The secondary objective of this report was to update the previously simulated period (transitional/winter Q2 2022 period) based upon the anticipated improvements noted above. As such, the revised dredge plume model report considers two scenarios, whereby hydrodynamic and sediment transport modelling for the AIP project is presented for a transitional/winter season (Q2 2022, Scenario 1) and a summer season consistent with the revised AIP schedule (Q4 2022 to Q1 2023, Scenario 2).</p> <p>The impact assessment was based on the intersection of the zones of impact that might result from the dredging activities with the mapped updated BCH identified in O2 Marine (BCH survey report). A conservative measure has been taken to list the entirety of the dredge footprint as a ZoHI, hence the ZoHI for Scenario 1 for which no modelled ZoHI (possible or probable) was detected, covers the dredge footprint only. As a possible ZoHI results from modelling Scenario 2 using the EPA (2021) impact assessment method, the ZoHI during a summer dredging program is depicted as the outermost extent of the combined dredge footprint and ZoHI derived using the EPA criteria.</p> <p><b>Table 8-11</b> within RSD V1 (and inserted) below presents the calculated areas of overlap between the zones of impact and the BCH for both scenarios. Zones of impact from Scenario 1 overlap predominantly with bare substrate, with some small overlap with the sand veneered limestone pavement and sand with sparse filter feeders (less than 1 ha of overlap each). Zones of impact from Scenario 2 only overlap with bare substrate, with areas of intersection being smaller than those in Scenario 1.</p> <p><b>Table 8-2: Dredge Plume Model Outcomes Areas of BCH within high and moderate zones of influence</b></p> <table border="1" data-bbox="848 1549 2116 1856"> <thead> <tr> <th data-bbox="848 1549 1181 1598">Zone of Influence</th> <th data-bbox="1181 1549 1466 1598">Certainty</th> <th data-bbox="1466 1549 2116 1598">Bare substrate (ha)</th> </tr> </thead> <tbody> <tr> <td data-bbox="848 1598 1181 1692">High</td> <td data-bbox="1181 1598 1466 1692">Dredge footprint – direct impact</td> <td data-bbox="1466 1598 2116 1692">3.1</td> </tr> <tr> <td data-bbox="848 1692 1181 1776" rowspan="2">Moderate</td> <td data-bbox="1181 1692 1466 1776">Probable – Indirect Impacts</td> <td data-bbox="1466 1692 2116 1776">33</td> </tr> <tr> <td data-bbox="1181 1776 1466 1856">Possible – Indirect impacts</td> <td data-bbox="1466 1776 2116 1856">35</td> </tr> </tbody> </table>	Zone of Influence	Certainty	Bare substrate (ha)	High	Dredge footprint – direct impact	3.1	Moderate	Probable – Indirect Impacts	33	Possible – Indirect impacts	35	<p><b>Figure 6-1, Figure 6-2, Figure 6-3, Figure 7-1, Figure 7-2</b></p> <p><b>Figure 8-6, Table 8-12, Section 8.4.1.4, Section 8.4.1.5, Section 8.5</b></p>
Zone of Influence	Certainty	Bare substrate (ha)												
High	Dredge footprint – direct impact	3.1												
Moderate	Probable – Indirect Impacts	33												
	Possible – Indirect impacts	35												

Reference	DWER Comment	MRL Response	RSD V1 Updates
<b>Marine Environmental Quality (MEQ)</b>			
	General	<p>MEQ moved from Other Factors (Section 11 in original RSD) to being a Key Environmental Chapter (Section 7) as determine by the EPA Level of Assessment Decision (LoA).</p> <p>The following sections have been included to update the information on BCH from Other Factors Section Structure to meet requirements of the Key Environmental Factors Section within the RSD:</p> <ul style="list-style-type: none"> <li>• Addition of <b>Table 7-1</b>: Policy Guidance for Marine Environmental Quality;</li> <li>• Updates to <b>Table 7-2</b> and inclusion of revised modelling outcomes for BCH.</li> <li>• <b>Section 7.3.2</b> Updates to Environmental Quality Management Framework</li> <li>• Addition of Section 7.4 including the expansion of direct and indirect impacts identification and discussions for consultation and operations in the following specific sections:                             <ul style="list-style-type: none"> <li>o <b>Section 7.4.1</b> Construction Phase Impacts;</li> <li>o <b>Section 7.4.2</b> Operational Phase Impacts; and</li> </ul> </li> <li>• Updates to <b>Section 7.5</b> including overview of management plans required to mitigate impacts to MEQ.</li> <li>• Addition of <b>Section 7.6.1</b> and <b>7.6.2</b> detailed discussion around the assessment of significance of residual impacts to MEQ.</li> <li>• Addition of <b>Section 7.6.3</b> to consider potential cumulative impacts to MEQ. and</li> </ul> <p>Addition of <b>Section 7.7</b> summarised the Environmental Outcomes of the Proposal on MEQ.</p>	<p><b>Section 7, Table 7-1, Table 7-2, Section 7.3.2, Section 7.4.1, Section 7.4.2, Section 7.5, Section 7.6.1, Section 7.6.2, Section 7.6.3, Section 7.7,</b></p>
6.1	Undertake a cumulative assessment of the additive effects of multiple wastewater discharge plumes to the nearshore marine environment.	A qualitative cumulative assessment of multiple wastewater discharge plumes to the nearshore marine environment as been undertaken, and this assessment and its outcomes will be included within the revised RSD. No additional modelling has been undertaken as there is no publicly available information regarding the characteristics and performance of the existing wastewater outfall located in the Port of Ashburton.	<b>Section 7.7</b>
6.2	Justification why a low EP has been proposed 70m around the brine outfall even though the modelling suggests that a moderate level of ecological protection is likely to be met only 3m from the discharge point.	The Low Ecological Protection Area (LEPA) / Moderate Ecological Protection Area (MEPA) boundary has been modified to be a 30 m boundary, any less than 30 m is impractical to accurately monitor and manage. The revised RSD chapter will be updated to reflect these changes as will the appended MOEMMP (updated figure within MOEMMP).	<b>Section 7.6.2.1</b> <b>Appendix D MEOMMP</b>
<b>Benthic Communities and Habitats (BCH)</b>			
	General	<p>BCH moved from Other Factors (Section 11 in original RSD) to being a Key Environmental Chapter (<b>Section 6</b>) as determine by the EPA Level of Assessment Decision (LoA).</p> <p>The following sections have been included to update the information on BCH from Other Factors Section Structure to meet requirements of the Key Environmental Factors Section within the RSD:</p> <ul style="list-style-type: none"> <li>• Addition of <b>Table 6-1</b>: Policy Guidance for Benthic Communities and Habitat;</li> <li>• Addition of <b>Section 6.4</b> including the expansion of direct and indirect impacts identification and discussions for consultation and operations in the following specific sections:                             <ul style="list-style-type: none"> <li>o <b>Section 6.4.1</b> Construction Phase Impacts;</li> <li>o <b>Section 6.4.2</b> Operational Phase Impacts; and</li> <li>o <b>Section 6.4.3</b> Zones of Impact.</li> </ul> </li> <li>• Updates to <b>Section 6.5</b> including overview of management plans required to mitigate impacts to BCH.</li> </ul>	<p><b>Section 6, Table 6-1, Section 6.4.1, Section 6.4.2, Section 6.4.3, Section 6.5, Section 6.6, Section 6.6.3, Section 6.7</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates
7.1	<p>Results of the model simulation of plume generated from the disposal of dredge material at Spoil Ground C. This is not included in the Dredge Plume Modelling Report.</p>	<ul style="list-style-type: none"> <li>• Addition of <b>Section 6.6</b> detailed discussion around the assessment of significance of residual impacts to BCH.</li> <li>• Addition of <b>Section 6.6.3</b> to consider potential cumulative impacts to BCH. and</li> <li>• Addition of <b>Section 6.7</b> summarised the Environmental Outcomes of the Proposal on BCH.</li> </ul> <p>Existing BCH mapping of Spoil Ground C (URS 2010) indicates that the spoil ground and the adjacent area is largely bare or sparsely covered substrate (BCH). However, during regulator consultation for the project it was noted that the URS 2010 mapping of this area was more than 10 years old and further evidence was required to confirm that the previous mapping remains accurate.</p> <p>MinRes engaged O2 Marine to undertake a BCH survey of Spoil Ground C to validate and update the existing BCH mapping and consider any impacts to BCH arising from dredge spoil disposal at this location.</p> <p>The objectives of the additional Spoil Ground C, BCH survey were to:</p> <ol style="list-style-type: none"> <li>1. Identify and characterise key BCH throughout Spoil Ground C, including a buffer area around the perimeter, via a drop camera survey</li> <li>2. Update the existing BCH mapping of Spoil Ground C and surrounding Local Assessment Unit</li> <li>3. Assess the potential impacts to BCH associated with disposing dredge material at Spoil Ground C.</li> </ol> <p>Following detailed analysis of the raw drop camera footage, each site was assigned a BCH classification taking into account the entire transect length. Two BCH classifications were assigned:</p> <ul style="list-style-type: none"> <li>• 81 sites (87 %) were classified as ‘Bare Substrate’</li> <li>• 12 sites (13%) were classified as ‘Sand with Sparse Filter Feeders’.</li> </ul> <p>BCH results from the March 2022 survey are comparable with the previous BCH investigation undertaken within Spoil Ground C for the Wheatstone Project by URS (URS 2010). URS (2010) presented results from their August 2009 survey and found the spoil ground sites “to be predominantly a flat substrate with sparse epibenthic biota”. Small patches of sparse <i>Halophyllia spinulosa</i> were recorded in the August 2009 survey, however, no seagrass was identified during the March 2022 survey (O2 Marine 2022). URS (2010) classified &lt;1% biota cover as ‘sparse’, however, for the March 2022 survey, O2 Marine classified biota cover as per the Collaborative and Automated Tools for Analysis of Marine Imagery (CATAMI) classification which assigns &lt;1% as bare. And 1 – 3% as sparse cover.</p> <p>Based on results from this survey together with the URS (2010) study, BCH within and adjacent to Spoil Ground C is classified as sand substrate with a biota cover ranging from bare to sparse (&lt;1% - 3%). These results align with Spoil Ground C being historically established as a designated disposal ground. The small amount of biota identified within the spoil ground are not restricted to this area and are well represented across the entire Pilbara coastline.</p> <p>Dredge material disposal will result in smothering of the previously disturbed substrate at Spoil Ground C. Since this site has previously been disturbed with the disposal of 27.6 Mm<sup>3</sup> material, this smothering should not be considered an additional impact.</p> <p>Dredge plume modelling results (O2M 2022) were overlayed on the BCH mapping of the region, including the updated BCH mapping at Spoil Ground C, which will be included within the revised RSD and supporting technical reports.</p> <p>The overlay indicated that there will be no adverse indirect impacts to any sensitive receptors i.e. coral, seagrass or phototrophic sponge communities from the disposal of dredge material at Spoil Ground C.</p> <p>The Proponent considers that the EPA’s objective “<i>To protect benthic communities and habitats so that biological diversity and ecological integrity are maintained</i>” (EPA 2021) is met in relation to dredge spoil disposal at Spoil Ground C.</p>	<p><b>Table 6-2, Table 7-2, Section 6.3.2, Section 6.3.3, Section 6.4, Figure 6-3, Section 6.5, Table 6-3, Section 6.6.1.1, Section 6.6.1.3. Section 6.6.2.1, Section 6.6.3, Section 6.7</b></p> <p>O2 Marine Supplementary Benthic Communities and Habitat Survey of Spoil Ground C – March 2022 <b>Appendix M</b></p>
7.2	<p>Details on the operation of the of the anchorage to minimise potential impacts on benthic communities and habitat, and whether moorings were considered as an alternative to reduce impacts.</p>	<p>The Proposal is located in relatively flat and shallow waters of the western Pilbara. The Offshore DE incorporates the anchorage points five dedicated offshore anchorages to accommodate. Capesize OGVs. The navigation route that traverses water depths of eight to 40 m, between the Nearshore and Offshore DEs. There is a slight gradient from the coast to the 20 m contour, where there is a steeper slope from 20 to 50 m. Depths at the offshore anchorage areas range between 27 to 59 m.</p> <p>An iterative process was undertaken to determine the final location of the five offshore transshipment anchorage points. Initial locations were investigated during the Benthic Communities and Habitat with a number of options being considered for the offshore anchorage points. The</p>	<p><b>Section 2.2.3.3, Section 6.6.3</b></p>

Reference	DWER Comment	MRL Response	RSD V1 Updates																																														
		<p>final location of the five offshore transshipment anchorage points were selected to <b>avoid</b> benthic habitat, which was mapped within the anchorage investigation area as being limited to the 30 m depth contour, with the seabed beyond this depth being predominantly bare sand. This results in a reduced potential impact to marine fauna, including listed species by avoiding impacts to benthic habitats. Initial design locations were moved to specifically avoid impacts to mapped benthic communities.</p> <p>As the anchorage area is devoid of BCH and was specifically selected in consideration of the mitigation hierarchy, whereby impacts to BCH are avoided through site selection, no further mitigation was considered warranted.</p> <p>TSVs and OGVs will anchor by using a single anchor in 30-40m of depth. In most cases depending on weather a scope of 3:1 will be required meaning a total of 120m of chain will be used. In most circumstances 30-40m of anchor chain will contact seabed around the anchoring point. The rest of the chain will be in the catenary to the vessel bow. The anchoring point will be the same for all anchorage operations and targeted by the ships captain using GPS navigation.</p> <p>The use of moorings were considered, however a large amount of permanently fitted infrastructure must be utilised for this size of vessel, involving large amounts of heavy chain, multiple anchor legs and clump weights. There is no advantage of this versus using a single anchor. In addition to this, OGVs are not normally fitted with bow working infrastructure and thus can make the operation of hanging off anchors hazardous and impractical.</p> <p>For the above reasons we consider the using of existing anchorage methods between the 30-40m contours to be the lowest environmental impact and optimal for the project.</p>																																															
<b>Greenhouse Gas Emissions</b>																																																	
	General	Revised structure of RSD to address movements of some factors from Other Factors to be Key Environmental Factors requiring their own Section within the RSD have revised the Greenhouse Gas Emissions Chapter from Section 9 to Section 12	<b>Section 12</b>																																														
8	The referral is missing information required by EPAs “Environmental Factor Guideline: Greenhouse Gas Emissions” (EPA 2020). In line with the EPAs guideline, please provide the following information:																																																
8.1	Credible estimates of scope 1, scope 2 and scope 3 GHG emissions (annual and total) over the life of a proposal	<p>The Ashburton Infrastructure Project is construction of a Haul Road and Operation of a Transshipping Port to export 30 Mt (dry) iron ore with design flexibility for future operational expansion to 40 Mt (dry) expected after year 10, subject to availability of ore. As such, the direct impacts and GHG assessment has been based on 30Mt throughput.</p> <p>Table 12-3 details the estimated GHG emissions for the Proposal. Further detail is provided in <b>Section 12.4.1</b> of the RSD.</p> <p><b>Table 12-3 Estimated Greenhouse Gas Emissions from the Proposal</b></p> <table border="1"> <thead> <tr> <th>Activity</th> <th>Energy Type</th> <th>Estimated Annual Quantity</th> <th>Scope 1 tCO<sub>2</sub>-e/yr</th> <th>Scope 2 tCO<sub>2</sub>-e/yr</th> <th>Scope 3 tCO<sub>2</sub>-e/yr</th> </tr> </thead> <tbody> <tr> <td rowspan="2"><b>Haul Road Construction (in Year 1 only)</b></td> <td>Diesel combustion Non-transport (Stationary Purposes)</td> <td>675,709 L</td> <td>1,831</td> <td>0</td> <td>0</td> </tr> <tr> <td>Vegetation clearing</td> <td>1,400 ha</td> <td>76,872</td> <td>0</td> <td>0</td> </tr> <tr> <td><b>Port Construction (in Year 1 only)</b></td> <td>Diesel combustion Non-transport (Stationary Purposes)</td> <td>6,274,439 L</td> <td>17,002</td> <td>0</td> <td>0</td> </tr> <tr> <td colspan="3"><b>Total GHG emissions for Year 1</b></td> <td><b>95,705</b></td> <td>-</td> <td>-</td> </tr> <tr> <td rowspan="2"><b>Port Operations from Year 2 @ 30Mtpa</b></td> <td>PNG combustion for electrical generations</td> <td></td> <td>32,230</td> <td>0</td> <td>-</td> </tr> <tr> <td>Diesel combustion Stationary Purposes (includes TSVS)</td> <td></td> <td>65,558</td> <td>0</td> <td>-</td> </tr> <tr> <td colspan="3"><b>Annual baseline GHG emissions</b></td> <td><b>97,788</b></td> <td><b>0</b></td> <td><b>54,602,377</b></td> </tr> </tbody> </table>	Activity	Energy Type	Estimated Annual Quantity	Scope 1 tCO <sub>2</sub> -e/yr	Scope 2 tCO <sub>2</sub> -e/yr	Scope 3 tCO <sub>2</sub> -e/yr	<b>Haul Road Construction (in Year 1 only)</b>	Diesel combustion Non-transport (Stationary Purposes)	675,709 L	1,831	0	0	Vegetation clearing	1,400 ha	76,872	0	0	<b>Port Construction (in Year 1 only)</b>	Diesel combustion Non-transport (Stationary Purposes)	6,274,439 L	17,002	0	0	<b>Total GHG emissions for Year 1</b>			<b>95,705</b>	-	-	<b>Port Operations from Year 2 @ 30Mtpa</b>	PNG combustion for electrical generations		32,230	0	-	Diesel combustion Stationary Purposes (includes TSVS)		65,558	0	-	<b>Annual baseline GHG emissions</b>			<b>97,788</b>	<b>0</b>	<b>54,602,377</b>	<b>Section 12.4.1</b> <b>Table 12-3</b>
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		<p>* Discrepancies in tables between totals and sums of components are due to rounding</p> <p>A breakdown of GHG emissions by source including stationary energy, non- transport emissions, transport emissions, and emissions associated with clearing is located in <b>Appendix U</b>.</p>																																					
8.2	A breakdown of GHG emissions by source inclusive of, but not limited to, stationary energy, fugitives, transport, and emissions associated with changes to land use	MinRes provided a breakdown of GHG emissions by source including stationary energy, non- transport emissions, transport emissions, and emissions associated with clearing within Section 2.2.1 of Appendix R of the RSD.	Section 12.4.1 Table 12-3																																				
8.3	Projected emissions intensity (emissions per unit of production) for the proposal and benchmarking against other comparable projects.	<p>The Proposal is an infrastructure project encapsulating a road network, power plant and stationary non-transport equipment to facilitate shipping activities. As a result, there are limited reported data on emissions associated with Port Operations for comparison and benchmarking.</p> <p>An emission intensity has been estimated for each aspect including 3<sup>rd</sup> Party mining and logistics to allow and understanding of the total carbon emission intensity of the ore, from mining to when it is loaded onto the OGV for export. This is outside of the scope of the project under assessment but allows comparison against global production and other Pilbara iron ore operations. The three aspects considered for benchmarking are summarised in <b>Table 12-4 (in RSD V1)</b>.</p> <p><b>Table 12-4 Aspects used for Benchmarking Purposes</b></p> <table border="1"> <thead> <tr> <th>Project Aspect</th> <th>Example for benchmarking</th> <th>Expected Scope 1 emissions (tCO<sub>2</sub>-e per year)</th> <th>Expected emissions Intensity (kgCO<sub>2</sub>-e/ dry Tonne of ore)</th> </tr> </thead> <tbody> <tr> <td>3<sup>rd</sup> Party Mining</td> <td>Mining and Processing at the West Pilbara Iron Ore Project</td> <td>228,501</td> <td>7.6</td> </tr> <tr> <td>3<sup>rd</sup> Party Haulage</td> <td>Transport Iron Ore from the West Pilbara Iron Ore Project to Ashburton Port</td> <td>137,915</td> <td>4.6</td> </tr> <tr> <td>Port Operations and Transshipping</td> <td>Port Operations and Transshipping to OGV</td> <td>97,788</td> <td>3.2</td> </tr> </tbody> </table> <p>Therefore, a representative max total carbon intensity of <b>15.4 kgCO<sub>2</sub>-e / dry Tonne of ore</b>, or 14.6 kgCO<sub>2</sub>-e / tonne as shipped (which includes 6% DEM) is provided for the Proposal.</p> <p>This carbon intensity value is comparative to the other major iron ore mining in the Pilbara and sits within the 36th percentile of carbon intensity against average global carbon intensity for iron ore production (Scope 1 and Scope 2 emissions) (see <b>Table 12-5, Figure 12-3</b>).</p> <p><b>Table 12-5 Carbon Intensity Benchmarking in the Pilbara, WA</b></p> <table border="1"> <thead> <tr> <th>Period</th> <th>Project</th> <th>Ore production (t) per annum</th> <th>Total scope 1 Emissions (tCO<sub>2</sub>-e / per year)</th> <th>Emissions Intensity (kgCO<sub>2</sub>-e Tonne of ore)</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Ashburton Emissions Intensity</b></td> </tr> <tr> <td></td> <td>RHIO-JV Mining</td> <td>31,800,000</td> <td>228,501</td> <td>7.2</td> </tr> <tr> <td></td> <td>RHIO-JV Pit to Port Haulage</td> <td>31,800,000</td> <td>137,915</td> <td>4.3</td> </tr> </tbody> </table>	Project Aspect	Example for benchmarking	Expected Scope 1 emissions (tCO <sub>2</sub> -e per year)	Expected emissions Intensity (kgCO <sub>2</sub> -e/ dry Tonne of ore)	3 <sup>rd</sup> Party Mining	Mining and Processing at the West Pilbara Iron Ore Project	228,501	7.6	3 <sup>rd</sup> Party Haulage	Transport Iron Ore from the West Pilbara Iron Ore Project to Ashburton Port	137,915	4.6	Port Operations and Transshipping	Port Operations and Transshipping to OGV	97,788	3.2	Period	Project	Ore production (t) per annum	Total scope 1 Emissions (tCO <sub>2</sub> -e / per year)	Emissions Intensity (kgCO <sub>2</sub> -e Tonne of ore)	<b>Ashburton Emissions Intensity</b>						RHIO-JV Mining	31,800,000	228,501	7.2		RHIO-JV Pit to Port Haulage	31,800,000	137,915	4.3	Section 12.6.1 Figure 12-2
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8.4	Commitment reduction strategies and targets.	<p>As a company it is committed to achieving net zero emissions across all its business by 2050. This will include new projects and application of proven technologies to achieve emissions reduction throughout 5 yearly capital expenditure cycles.</p> <p>Initial investment will involve application of solar energy systems to offset peak power use at both Mine and Port.</p> <p>Significant opportunities exist in fuel substitution in the mining &amp; transport fleet and transshipping (which makes up 2/3rds of the total GHG emissions for the entire operation) by moving to green fuel and eventually full electric vehicle capability over the life of the project. These technologies are still under development however MinRes has already selected its haulage fleet supplier to provide the greatest flexibility in retrofitting vehicles as these technologies are delivered to market.</p> <p>MinRes has strategically positioned itself to be a fast follower of proven green technology and is currently setting 5 yearly business targets for emissions reductions, with the board set to approve targets in the near future. These targets will support the MRL roadmap to zero emissions by 2050 at the latest and will underpin the early adoption of new technology to achieve the goals.</p>	<p><b>Section 12.5</b></p> <p><b>Section 12.6.2</b></p>																														