



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	8464/3
Permit type:	Purpose Permit
Applicant name:	Greenmount Resources Pty Ltd
Application received:	29 January 2024
Application area:	425 hectares
Purpose of clearing:	Gas Pipeline and Associated Infrastructure
Method of clearing:	Mechanical Removal
Tenure:	Miscellaneous Licences 52/189, 52/192, 52/197
Location (LGA area/s):	Shire of Meekatharra
Colloquial name:	Karlawinda Gold Project

1.2. Description of clearing activities

Greenmount Resources Pty Ltd proposes to clear up to 425 hectares of native vegetation within a boundary of approximately 1,119 hectares, for the purpose of gas pipeline and associated infrastructure. The project is located approximately 44.5 kilometres south of Newman, within the Shire of Meekatharra.

Based on the last reporting period (1 July 2022 to 30 June 2023), the total amount of clearing conducted under the permit is 267.27 hectares. It was also reported that 124.68 hectares of the clearing has been rehabilitated (Capricorn Metals, 2023).

The application is to allow for ongoing access for service and maintenance of the gas pipeline and its associated infrastructure.

Clearing permit CPS 8464/1 was granted by the Department of Mines, Industry Regulation and Safety (now the Department of Energy, Mines, Industry Regulation and Safety) on 30 May 2019 and was valid from 22 June 2019 to 21 June 2024. The permit authorised the clearing of up to 200 hectares of native vegetation within a boundary of approximately 1,119 hectares, for the purpose of gas pipeline and associated infrastructure.

CPS 8464/2 was granted on 16 January 2020, amending the permit to increase the amount of clearing authorised from 200 to 425 hectares (increase of 225 hectares). The permit boundary remained unchanged.

On 29 January 2024, the Permit Holder applied to amend CPS 8464/2 to extend the permit duration by five years, to 21 June 2029.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	11 June 2024
Decision area:	425 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) on 23 February 2024. DEMIRS advertised the application for a public comment for a period of 7 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), supporting information provided by the applicant including the results of biodiversity surveys, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3). The Delegated Officer also took into consideration the purpose of the clearing to install and maintain a gas pipeline.

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora; and
- impacts to vegetation growing in association with a watercourse.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- avoid clearing riparian vegetation where practicable and maintain existing surface flow of impacted watercourses or wetlands.

The assessment has not changed since the assessment for CPS 8464/2. The Delegated Officer determined that the proposed extension of duration is not likely to lead to an unacceptable risk to environmental values.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *The Petroleum and Geothermal Energy Resources Act 1967* (WA)
- *The Petroleum Pipelines Act 1969* (WA)

Relevant agreements (treaties) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has stated that the following environmental management measures will be implemented to avoid, minimise and reduce the impacts of clearing (Tetris, 2019):

- Ground Disturbance Permit procedures will be implemented prior to clearing;
- Utilise existing access tracks or other cleared areas to prevent unnecessary clearing;
- Earthmoving equipment will be inspected for the presence of potential weed retaining soils and vegetation matter prior to the commencement of clearing works;
- Areas designated for clearing will be surveyed and boundaries clearly demarcated. Operator personnel will be familiarised with demarcated areas prior to clearing works commencing to ensure no clearing beyond demarcated clearing zones;
- Clearing will be undertaken progressively so only those areas absolutely required for operations are disturbed
- Creek crossings will be appropriately designed to maintain surface water flows and prevent up and down stream impacts to riparian vegetation;
- Fauna management procedures will be implemented to reduce the potential impact from construction and pipe trenching activities;
- Practicable erosion management methods during clearing and operation, such as the installation of appropriate drainage infrastructure in areas subject to inundation to enable free flowing surface water and prevent upstream ponding;
- Vehicles and equipment will adhere to speed limits and avoid driving over, or parking on, vegetation and/or tree roots that is not designated for clearing;
- Effective waste containment and management procedures will be implemented; and
- Induct and educate personnel on environmental requirements of the Project.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 8464/2.

3.2.1. Biological values (flora) - Clearing Principles (a)

Assessment

A flora and vegetation survey of the Karlawinda Gas Pipeline corridor and proposed borrow pits recorded three priority 3 flora species in the application area and surrounds (Morgan, 2018; Western Australian Herbarium, 1998-):

- *Aristida jerichoensis* var. *subspinulifera*
- *Eremophila rigida*
- *Rhagodia* sp. Hamersley

A number of these individuals having been cleared since the issue of the permit, resulting in local impacts to their populations (Capricorn Metals, 2023; Morgan, 2018; Western Australian Herbarium, 1998-). These local impacts are unlikely to have significantly impacted the conservation status of these species, given they have numerous populations recorded in multiple bioregions (Western Australian Herbarium, 1998-).

Further local impacts to these species may occur as a result of the proposed amendment due to uncleared individuals potentially persisting within the permit boundary. Further clearing of these species will increase local impacts, however their presence in the local area will be retained given they were also recorded outside the application area (Morgan, 2018).

Two introduced flora species were recorded during the flora and vegetation survey (Morgan, 2018). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area.

Conclusion

Based on the above assessment, the proposed clearing will result in localised impacts to priority flora species, however these impacts are unlikely to result in significant regional or species level impacts.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid, minimise to reduce the impacts and extent of clearing; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 23 February 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are three native title claims (Federal court number: WAD6280/1998; WAD78/2005; WAD196/2013) over the area under application (DPLH, 2024). These claims have been determined by the Federal Court on behalf of the claimant groups. The mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2024). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- An Environment Plan approved under the *Petroleum Pipelines Act 1969*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details																														
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of the Augustus subregion of Western Australia. The majority of the Augustus subregion consists of native grazing pastoral land, in addition iron and precious metal mining operations (CALM, 2002; GIS Database). Most mining tenure surrounding the application area falls within pastoral lands (CALM, 2002; GIS Database).</p> <p>Approximately 99.5% of the local area (50 kilometre radius from the area proposed to be cleared) remains uncleared (GIS Database).</p>																														
Ecological linkage	The application area is not considered a significant ecological linkage. The vegetation immediately surrounding the application area and the majority of the region remains uncleared (GIS Database).																														
Conservation areas	The application area is not located within any conservation areas (GIS Database). The nearest legislated conservation area is Collier Range National Park, located approximately 70 kilometres south of the application area (GIS Database).																														
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>29: Sparse low woodland; mulga, discontinuous in scattered groups; and 178: Hummock grasslands, grass steppe; hard spinifex, <i>Triodia basedowii</i> (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Morgan (2018) during March and May 2018. The following vegetation types were recorded within the application area (Morgan, 2018):</p> <table border="1"> <thead> <tr> <th>CODE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td colspan="2"><i>Vegetation of the plains – sparse vegetation on hardpan plain</i></td> </tr> <tr> <td>Er</td> <td><i>Eremophila rigida</i>, (<i>Senna artemisioides</i> subsp. <i>helmsii</i>, <i>Senna glaucifolia</i>, <i>Solanum lasiophyllum</i>, <i>Ptilotus obovatus</i> var. <i>obovatus</i>, <i>Eremophila incisa</i>) scattered shrubs to low open shrubland over <i>Aristida contorta</i> scattered grasses</td> </tr> <tr> <td>PsAco</td> <td>Sparsely scattered shrubs that typically include some combination of <i>Acacia aptaneura</i>, <i>Acacia pteraneura</i>, <i>Acacia subcontorta</i>, <i>Acacia rhodophloia</i> and <i>Eremophila galeata</i> over scattered low shrubs that included some combination of <i>Eremophila incisa</i>, <i>Eremophila exilifolia</i>, <i>Eremophila flaccida</i>, <i>Eremophila jucunda</i> subsp. <i>pulcherrima</i>, <i>Senna glaucifolia</i>, <i>Senna artemisioides</i> subsp. <i>helmsii</i> and <i>Ptilotus obovatus</i> subsp. <i>obovatus</i> over <i>Aristida contorta</i> scattered grasses to very open grassland</td> </tr> <tr> <td colspan="2"><i>Vegetation of the plains – areas of ‘groves’ and ‘sand sheet’ vegetation</i></td> </tr> <tr> <td>AapAcaCh</td> <td><i>Acacia ?aptaneura</i>, <i>Acacia catenulata</i> subsp. <i>occidentalis</i>, (<i>Corymbia hamersleyana</i>) low woodland over <i>Psyrax latifolia</i> scattered tall shrubs over <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Sida ?ectogama</i> scattered shrubs to open shrubland</td> </tr> <tr> <td>AcaAaGb</td> <td><i>Acacia catenulata</i> subsp. <i>occidentalis</i>, <i>Acacia aneura</i>, <i>Acacia aptaneura</i>, <i>Grevillea berryana</i> low woodland to low open forest over <i>Psyrax latifolia</i> scattered tall shrubs over <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Sida 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Vegetation condition	<p>The vegetation condition over the majority of the application area was considered to be in 'very good' condition, based on the vegetation survey, which is described as (Morgan, 2018; Trudgen, 1991):</p> <ul style="list-style-type: none"> Very good: Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks. <p>The full Trudgen (1991) condition rating scale is provided in Appendix C.</p>										
Climate and landform	<p>The climate of the Augustus subregion is described as arid, with the nearest weather station recording an average rainfall of approximately 317.4 millimetres per year (BoM, 2024; CALM, 2002).</p> <p>The application area is mapped an elevation of 600 metres Australian height datum (GIS Database). The landforms within the application area are generally flat hardpan plains subject to sheet flow, occasional sandy banks occurring perpendicular to sheet flow, drainage channels, and groves occurring in bands across hardpan plains (DPIRD, 2024; Van Vreeswyk et al., 2004; GIS Database).</p>										
Soil description	<p>The soils within the application area are mapped as the following (DPIRD, 2024; Van Vreeswyk et al., 2004; GIS Database):</p> <table border="1"> <thead> <tr> <th>SYSTEM</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>Nooingnin (782.4 ha)</td> <td>red-brown hardpan shallow loam, red loamy earth, red deep sand</td> </tr> <tr> <td>Cadgie (305.6 ha)</td> <td>red deep sand, red-brown hardpan shallow loam, red shallow sand, red loamy earth</td> </tr> <tr> <td>Egerton (27.5 ha)</td> <td>red shallow loam, red shallow sand, red loamy earth, red-brown hardpan shallow loam</td> </tr> <tr> <td>Collier (3.4 ha)</td> <td>red shallow loam, red/brown non-cracking clay, red-brown hardpan shallow loam, red loamy earth</td> </tr> </tbody> </table>	SYSTEM	DESCRIPTION	Nooingnin (782.4 ha)	red-brown hardpan shallow loam, red loamy earth, red deep sand	Cadgie (305.6 ha)	red deep sand, red-brown hardpan shallow loam, red shallow sand, red loamy earth	Egerton (27.5 ha)	red shallow loam, red shallow sand, red loamy earth, red-brown hardpan shallow loam	Collier (3.4 ha)	red shallow loam, red/brown non-cracking clay, red-brown hardpan shallow loam, red loamy earth
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Collier (3.4 ha)	red shallow loam, red/brown non-cracking clay, red-brown hardpan shallow loam, red loamy earth										
Land degradation risk	<p>The land systems mapped within the application area are generally not susceptible to erosion, however the Nooingnin land system can be in extreme cases of vegetation loss (DPIRD, 2024; Van Vreeswyk et al., 2004; GIS Database).</p>										
Waterbodies	<p>The eastern end of the application area intersects the Lake Disappointment (Savory Creek) System, which is listed in the Directory of Important Wetlands in Australia (DCCEEW, 2024; GIS Database). The application area also intersects the priority 1 Wild Rivers listed Savory Creek (GIS Database).</p> <p>In addition, multiple minor, non-perennial watercourses intersect the application area (GIS Database).</p>										
Hydrogeography	<p>The application area is not within any Public Drinking Water Source Areas (GIS Database). The application area is located within the East Murchison Groundwater Area and the Pilbara Surface Water Area, proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (GIS Database).</p> <p>The mapped groundwater salinity is 500-1,000 total dissolved solids milligrams per litre, which is described as marginal water quality (GIS Database).</p>										
Flora	<p>There are records of 28 priority flora species within 50 kilometres of the application area (GIS Database).</p>										

Characteristic	Details
Ecological communities	The nearest ecological community is the state listed 'Ethel Gorge aquifer stygobiont community' threatened ecological community (CR) (GIS Database).
Fauna	There are records of 29 conservation significant fauna species within 50 kilometres of the application area (GIS Database). There are 14 migratory, eight priority, one other specially protected species, five vulnerable, and one critically endangered species (GIS Database).
Fauna habitat	<p>A fauna survey was conducted over the application area by Bamford Consulting Ecologists (BCE) (2018) during March 2018. The following fauna habitats were recorded within the application area (Bamford, 2018):</p> <ol style="list-style-type: none"> 1. Scattered open shrubland on hardpan plains; 2. Bands of mulga/<i>Acacia</i> woodlands on low rises between plains; 3. Minor drainage lines, with open <i>Acacia</i> woodlands over open shrublands and mixed grasslands; 4. Minor drainage lines, with <i>Acacia</i> and <i>Eucalyptus</i> woodlands over mixed shrubland; 5. Major drainage lines, with <i>Acacia</i> and <i>Eucalyptus</i> woodlands over mixed shrubland; 6. Sparse <i>Acacia</i> shrubland over <i>Triodia</i> hummock grassland on sandy loams; 7. <i>Acacia</i> shrubland on low rocky rises with occasional outcrops; and 8. Open <i>Acacia</i> shrubland over mixed grasses - ephemeral wetlands/damplands.

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion - Gascoyne	18,075,219	18,067,441	~99	1,855,508	10.27
Beard vegetation associations - State					
29	7,903,991	7,898,973	~99	496,367	6.28
178	578,161	578,161	~100	2,307	0.40
Beard vegetation associations - Gascoyne bioregion					
29	3,802,459	3,799,635	~99	297,087	7.81
178	33,051	33,051	~100	488	1.48

Government of Western Australia (2019)

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u> The area proposed to be cleared contains locally significant priority flora.</p>	Not likely to be at variance as per CPS 8464/2	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u> A fauna survey of the application area did not record any conservation significant fauna species (BCE, 2018). The fauna habitats found within the application area were determined to be common and widespread within the region and well represented in the surrounding areas (BCE, 2018; Appendix A.1: Fauna habitat). None of the</p>	Not likely to be at variance as per CPS 8464/2	No

Assessment against the clearing principles	Variance level	Is further consideration required?
recorded habitats were considered to be significant, or necessary for the maintenance of conservation significant fauna species BCE, 2018).		
<p><u>Principle (c):</u> <i>"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</i></p> <p><u>Assessment:</u></p> <p>There are no known records of threatened flora species within the application area or within a 50 kilometre radius (GIS Database). Flora surveys of the application area did not record any species of threatened flora (Morgan, 2018).</p> <p>The vegetation types recorded within the application area are common and widespread within the region and are unlikely to provide suitable habitat for threatened flora species (Morgan, 2018; Western Australian Herbarium, 1998-; GIS Database).</p>	Not likely to be at variance as per CPS 8464/2	No
<p><u>Principle (d):</u> <i>"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."</i></p> <p><u>Assessment:</u></p> <p>There are no known state or federally listed threatened ecological communities (TECs) located within or in close proximity to the application area (GIS Database). The nearest known threatened ecological community is the state listed 'Ethel Gorge aquifer stygobiont community' (CR) located approximately 43 kilometres north of the application area (GIS Database).</p> <p>Flora, vegetation, and fauna surveys of the application area did not record any assemblage of organisms that could be representative of a TEC (Bamford, 2018; Morgan, 2018).</p>	Not likely to be at variance as per CPS 8464/2	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Gascoyne Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Gascoyne Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation associations 29: Sparse low woodland; mulga, discontinuous in scattered groups; and 178: Hummock grasslands, grass steppe; hard spinifex, <i>Triodia basedowii</i> (GIS Database).</p> <p>Approximately 99-100% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>The vegetation proposed to be cleared is unlikely to represent a significant area of remnant vegetation within a bioregional context (GIS Database).</p>	Not at variance as per CPS 8464/2	No
<p><u>Principle (h):</u> <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."</i></p> <p><u>Assessment:</u></p> <p>The application area is not located within any conservation areas (GIS Database). The nearest conservation area is Collier Range National Park, located approximately 70 kilometres south of the application area (GIS Database).</p> <p>The proposed clearing is unlikely to impact on the environmental values of any conservation area.</p>	Not likely to be at variance as per CPS 8464/2	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</i></p> <p><u>Assessment:</u></p>	At variance as per CPS 8464/2	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The application area intersects the Lake Disappointment (Savory Creek) System, which is listed in the Directory of Important Wetlands in Australia (DCCEEW, 2024; GIS Database). The application area also intersects the buffer zone for priority 1 Wild Rivers listed Savory Creek (GIS Database). There are three larger drainage lines that intersect the application area that flow in a southerly direction towards Savory Creek (GWRM, 2018; GIS Database).</p> <p>Several of the vegetation types described in the vegetation survey grow in association with open channel creeks, broad shallow flow areas, and internal drainage flats (Morgan, 2018).</p> <p>Potential impacts to vegetation growing in association with a watercourse may be minimised by the continued implementation of a watercourse management condition.</p>		
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped land systems are generally not susceptible to erosion, however the Nooingnin land system can be in extreme cases of vegetation loss (DPIRD, 2024; Van Vreeswyk et al., 2004; GIS Database). Noting the linear nature of the application area, the proposed clearing is unlikely to result in an extreme vegetation loss and therefore unlikely to result in appreciable land degradation.</p>	<p>Not likely to be at variance</p> <p>as per CPS 8464/2</p>	<p>No</p>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>There are no Public Drinking Water Source Areas (PDWSA) within or in close proximity to the application area (GIS Database). The nearest PDWSA is the Newman Water Reserve, located approximately 38.7 kilometres to the north of the application area (GIS Database).</p> <p>There are no permanent watercourses or wetlands within the area proposed to be cleared (GIS Database). All local watercourses are ephemeral and only carry flow following prolonged periods of heavy rainfall (GWRM, 2018).</p> <p>The proposed clearing is unlikely to result in significant changes to surface water flows and is unlikely to cause deterioration in the quality of surface or underground water.</p>	<p>Not likely to be at variance</p> <p>as per CPS 8464/2</p>	<p>No</p>
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>Multiple minor, non-perennial watercourses intersect the application area (GIS Database). While the regional climate is semi-arid, flows along these watercourses can occasionally be high as a result of intense cyclonic or depression related rainfall (GWRM, 2018). Temporary localised flooding may occur following prolonged periods of heavy rainfall, and is typical of the region (GWRM, 2018).</p> <p>Given the linear infrastructure of the application area, it is unlikely that continued clearing will cause or exacerbate the incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>as per CPS 8464/2</p>	<p>No</p>

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Contours (DPIRD-073)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery
- Wild Rivers (DWER-087)

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

- Bamford Consulting Ecologists (Bamford) (2018) Fauna Assessment - Karlawinda project; Pipeline and Access Corridor. Prepared for Tetris Environmental, by Bamford Consulting Ecologists. April 2018.
- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Newman Aero. Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed 19 March 2024).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Capricorn Metals (2023) Clearing Permit Report 8464/2. 1 July 2022 – 30 June 2023. Prepared for Greenmount Resources Pty Ltd, by Mathew Lyons, July 2023.
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024) Australian Wetlands Database. <https://www.dcceew.gov.au/water/wetlands/australian-wetlands-database> (Accessed 14 May 2024).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
- Department of Planning, Lands and Heritage (DPLH) (2024) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 14 May 2024).
- Department of Primary Industries and Regional Development (DPIRD) (2024) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 19 March 2024).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf
- Environmental Protection Authority (EPA) (2020) Technical Guidance – Terrestrial Fauna Surveys. https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Greenmount Resources (2024) Amendment clearing permit application form, CPS 8464/3, received 29 January 2024.
- Groundwater Resource Management (GWRM) (2018) Karlawinda Gold Project – Gas Pipeline Corridor Preliminary Hydrologic Assessment. Prepared for Capricorn Metals Limited, by Groundwater Resource Management, May 2018.
- Morgan, B. (2018) A Reconnaissance Survey of Flora and Vegetation of the Proposed Karlawinda Gas Pipeline Corridor. Prepared for Tetris Environmental, by Brian Morgan, June 2018.
- Tetris Environmental (Tetris) (2019) Karlawinda Gold Project Clearing Permit Application - Purpose Permit Supporting Document. Prepared for Greenmount Resources Pty Ltd, by Tetris Environmental, April 2019.
- Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 15 May 2024).

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)

DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia):-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its*

life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI

Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD

Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS

Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P

Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1

Priority One - Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2

Priority Two - Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature

reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.