



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4532/10
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Argyle Diamonds Limited

1.3. Property details

Property: Diamond (Argyle Diamond Mines Joint Venture) Agreement Act 1981,
Mining Lease 259SA (AM 70/259)
Mining Lease 80/114
Miscellaneous Licence 80/1
Local Government Area: Shire of Wyndham-East Kimberley
Colloquial name: Argyle Diamond Mine

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
416		Mechanical Removal	Mineral Exploration, Mineral Production and Associated Activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 30 June 2021

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. The vegetation of the application area is broadly mapped as Beard vegetation associations:

- 65** - Grasslands, tall bunch grass savanna, sparse low tree, terminalia; mitchell grass (*Astrebla pectinata* and spp.);
- 126** - Bare areas; freshwater lakes;
- 808** - Grasslands, curly spinifex, low tree savanna; snappy gum over curly spinifex;
- 816** - Grasslands, short bunch grass savanna, low tree, Mt House box (*Eucalyptus argillacea*) and bloodwood over arid short grass (*Enneapogon* spp.);
- 818** - Hummock grasslands, low tree steppe; Snappy Gum over *Triodia inutilis*;
- 819** - Grasslands, tall bunch grass savanna low tree; cabbage gum and silverleaved box over arid short grass on sandy plains;
- 820** - Grasslands, high grass savanna sparse low tree; snappy gum (*Eucalyptus brevifolia*) over upland tall grass and curly spinifex on granite;
- 825** - Grasslands, high grass savanna woodland; cabbage gum and *Eucalyptus foelscheana* over upland tall grass and curly spinifex on basalt;
- 827** - Hummock grasslands, low tree steppe; terminalia over *Triodia wiseana* on limestone; and
- 833** - Grasslands, short bunch grass savanna sparse low tree; scattered Snappy Gum over arid short grass on plains (GIS Database).

Vegetation association 816 was not present in previous versions of the clearing permit (GIS Database).

Several flora surveys have been previously conducted by Mattiske (1998; 2002; 2003; 2004) which cover approximately half of the permit area. The majority of the permit area has also been covered by previous vegetation mapping undertaken by Dames and Moore (1982). The following vegetation complexes have been identified within the addition areas included as part of CPS 4532/10:

Dames and Moore vegetation associations and complexes:

- Mountain complex
- Riverine complex
- Hill complex
- Plains complex
- Cracking clay plains complex
- Levee/terrace complex
- Frosted bloodwood –steppe woodland association
- Kimberley gum – low tree steppe association

- Thickets associations

Hummock Grasslands

HG1 Hummock Grassland of *Triodia bitextura* and *Triodia bynoei* with emergent *Eucalyptus brevifolia*, *Corymbia confertiflora*, *Corymbia opaca*, *Eucalyptus pruinosa*, *Bauhinia cunninghamii* over *Acacia argyrea* and *Acacia hemignosta*;

HG2 Hummock Grassland of *Triodia bitextura* and *Triodia bynoei* with emergent *Corymbia confertiflora*, *Corymbia opaca*, *Eucalyptus brevifolia*, *Eucalyptus pruinosa*, *Bauhinia cunninghamii* and *Terminalia canescens*;

HG3 Hummock Grassland of *Triodia bitextura* and *Triodia bynoei* with emergent denser pockets of *Terminalia canescens* and *Cochlospermum fraseri*, with the occasional *Corymbia confertiflora* and *Eucalyptus brevifolia*;

Woodlands

W1 Low Open Woodland of *Terminalia canescens* with *Corymbia confertiflora*, *Eucalyptus brevifolia*, *Terminalia oblongata* subsp. *volucris* and *Eucalyptus pruinosa* over patches of *Triodia bitextura* and *Heteropogon contortus*;

W2 Low Open Woodland of *Melaleuca minutifolia* and *Eucalyptus pruinosa* over *Triodia bitextura*;

W4 Open Woodland and Low Open Woodland of *Terminalia platyptera*, *Terminalia arostrata*, *Adansonia gregorii*, *Buchanania obovata* and *Bauhinia cunninghamii*;

W5 Mixture of Open Woodland and Low Open Woodland of *Adansonia gregorii*, *Buchanania obovata*, *Bauhinia cunninghamii* and *Eucalyptus brevifolia* over patches of *Typha domingensis*, *Heteropogon contortus*, *Cenchrus elymoides* and *Chloris truncata*;

W6 Low Open Woodland of *Melaleuca minutifolia* over patches of *Typha domingensis*;

W7 Low Open Woodland of *Bauhinia cunninghamii* and *Eucalyptus pruinosa* over mixed grasses and herbs;

W9 Low Open Woodland of *Corymbia opaca*, *Eucalyptus brevifolia*, *Eucalyptus pruinosa* and *Cochlospermum fraseri* over *Ptilotus spicatus* subsp. *spicatus*, *Cleome viscosa* and *Phyllanthus maderaspatensis* var. *angustifolia*.

Clearing Description

Argyle Diamond Mine.

Argyle Diamonds Limited is proposing to clear up to 416 hectares of native vegetation within a boundary of approximately 7,423.5 hectares for the purposes of mineral exploration, infrastructure, operational maintenance and reworking of tailings material. The project is located approximately 200 kilometres south west of Kununurra within the Shire of Wyndham-East Kimberley.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

To

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

Clearing permit CPS 4532/1 was granted by the Department of Mines and Petroleum (DMP) on 13 October 2011. The clearing permit authorised the clearing of 50 hectares of native vegetation within a total boundary of 1,900 hectares.

CPS 4532/1 was amended on 2 August 2012 for the purpose of changing the annual reporting date from 31 July to 30 September each year.

On 27 December 2012, CPS 4532/2 was amended for the purpose of increasing the permit boundary from approximately 1,900 hectares to 2,608 hectares and changing the purpose of the clearing to infrastructure and operational maintenance.

CPS 4532/3 was amended on 6 February 2014, to increase the permit boundary by 18.34 hectares to approximately 2,626 hectares.

CPS 4532/4 was amended on 24 December 2015, to increase the permit boundary from 2,626 hectares to 2,696 hectares.

CPS 4532/5 was amended on 26 May 2016 to amend the purpose of clearing, amend the period in which clearing is authorised to allow for 15 hectares to be cleared each financial year, and increase the permit boundary.

CPS 4532/6 was amended on 20 October 2016 for the purposes of increasing the permit boundary, increasing the permitted amount of clearing to 300 hectares, amending the purpose of clearing and amalgamating eight existing permits into one permit.

CPS 4532/7 was amended on 4 May 2017 for the purpose of increasing the permit boundary by 74.85 hectares.

CPS 4532/8 was amended on 15 March 2018 for the purpose of increasing the permit boundary by 3.26 hectares to allow for rehabilitation trials on a waste rock dump.

Argyle Diamonds Ltd has applied to amend CPS 4532/9 to increase the amount of clearing authorised to 416 hectares and increase the clearing permit boundary to approximately 7,423.5 hectares (see Figure 1). These changes to the permit are to facilitate rehabilitation activities.



Figure 1: Previous permit boundary (yellow area) and proposed amended permit boundary (blue areas)



Figure 2: Photos of water ponding in the alluvial tailings storage area.

3. Assessment of application against clearing principles

Comments

This amendment is to increase the amount of clearing authorised by 116 hectares, increase the permit boundary by approximately 704.6 hectares and extend the duration of the permit by four years to allow for rehabilitation activities to be completed.

Mining at the Argyle Diamond mine ceased in November 2020 (Rio Tinto, 2020). The proposed amendment is to facilitate mine closure activities at the site. Proposed works include the reprofiling of waste dumps (which are outside of the permit boundary but which require the boundary to be amended to allow these activities to be undertaken). Due to a lack of available growth medium on site, Argyle Diamonds is proposing to excavate borrow pits to harvest topsoil and other growth material for use on the waste dumps and tailings storage facility. Most of the borrow pits will be rehabilitated by being reshaped, ripped and having grubbed vegetation material and 10% of the stripped topsoil spread over the area (Argyle Diamonds, 2021). The majority of the permit boundary extension is associated with rehabilitation of an alluvial tailings dam (specifically ATD5). The dam was only partially utilised during operations and the dam has created areas where the pooling of water has caused the death of vegetation in some areas along with ingress from cattle (see figure 2). The rehabilitation works will include the lowering of the embankment wall to prevent further pooling of water, selective ripping and seeding with native vegetation (Argyle Diamonds, 2021). Due to the rehabilitation activities using topsoil for works outside of the permit area and the proposed rehabilitation method of the borrow pits, the rehabilitation condition on the permit has been amended to allow these activities to occur.

There is one vegetation complex; frosted bloodwood – steppe woodland, which is present within the additional areas which was not recorded in the previous permit boundary (Argyle Diamonds, 2021). There is approximately 20 hectares of this vegetation complex within the additional area. Clearing of this vegetation complex is expected to be limited to removal of a tank during closure and there is a large band of this vegetation complex which extends outside of the permit area (Argyle Diamonds, 2021; Dames and Moore, 1982).

The majority of the additional area is covered by the plains, thickets and riverine vegetation complexes which were present in the alluvial tailings dam area (Argyle Diamonds, 2021). The plain and riverine vegetation complexes are well represented outside of the permit boundary, whilst the thickets vegetation complex is more restricted and was not as well represented outside of the permit boundary (Argyle Diamonds, 2021; Dames and Moore, 1982; Mattiske, 2004).

No Threatened flora, Threatened Ecological Communities or Priority flora have been identified within the additional area (GIS Database). The 'Vegetation Association 833 as defined by John Beard's vegetation mapping for the Kimberley (Beard 1979)' Priority Ecological Community (PEC) has been mapped over some of the additional areas included in this amendment (GIS Database). This PEC covers a significant portion of the whole permit area. The 'Argyle land system' PEC is also present within the permit area (GIS Database). The major threats to these PECs are extensive threatening processes acting at landscape scales such as over grazing and weed invasion (buffel grass) (DBCA, 2020). Whilst the proposed clearing may remove some of the vegetation associated with these PECs, it is not likely to have an impact on these communities at a landscape level.

There is a diverse range of habitats present across the permit area which are likely to support a diverse assemblage of fauna. Several conservation significant fauna species have been recorded in the permit area such as the Gouldian Finch (*Erythrura gouldiae* – Priority 4), Lakelands Downs Mouse (*Leggadina lakedownensis* – Priority 4) and Peregrine Falcon (*Falco peregrinus* – Other specially protected fauna) (GIS Database). Whilst the proposed clearing will reduce the availability of habitat at a local level, the habitats present are still well represented outside of the permit area and the vegetation present is not likely to represent significant habitat for native fauna species. The proposed activities for this amendment are to facilitate mine rehabilitation works which if successful will improve the quality of the habitat across the site.

There are several minor ephemeral drainage lines within the additional area, particularly in the area of the alluvial tailings storage facility (GIS Database). The proposed rehabilitation activities in this area are to ameliorate the impacts from the ponding water caused by the dam wall and will involve the selective ripping of areas avoiding any good stands of existing vegetation where possible (Argyle Diamonds, 2011). Given the nature of the proposed activities in this area, the proposed amendment is not likely to have a significant impact on watercourses or riparian vegetation. The permit area lies entirely within the Ord River catchment, upstream of Lake Argyle which is a Ramsar listed wetland located 1.5 kilometres north-east of the minesite (GIS Database). The proposed amendment is not likely to have an impact on either the surface or groundwater quality in the local region.

The additional area has been mapped as the Antrim, Dinnabung, O'Donnell, MacPhee, Weaber and Wickham land systems (GIS Database). These land systems were all present in the previous permit area (GIS Database). The Antrim land system is stony and not susceptible to erosion. The Dinnabung land system also has a low susceptibility to erosion. The interfluves and drainage floors of the O'Donnell land system have a moderate susceptibility to erosion. The O'Donnell land system was present primarily in areas of the alluvial tailings storage facility. The MacPhee land system can be susceptible to gully erosion where vegetation cover is removed from slopes (Payne and Schoknecht, 2011). The Weaber and Wickham land systems are very

rugged and are not likely to have a high risk of erosion (Payne and Schoknecht, 2011).

The proposed amendment is not likely to have any significant environmental impacts above those already assessed under previous versions of the clearing permit. The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), may be at variance to Principle (a), is not likely to be at variance to Principles (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

Methodology Argyle Diamonds (2021)
Dames and Moore (1982)
DBCA (2020)
Mattiske (2004)
Payne and Schoknecht (2011)
Rio Tinto (2020)

GIS Database:
- Hydrography, linear
- Imagery
- Landsystem Rangelands
- Pre-European Vegetation
- Ramsar Sites Western Australia
- Threatened and Priority Fauna
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 22 February 2021 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received.

There is one Native Title claim over the area under application (DPLH, 2021). However, 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 several registered Aboriginal Sites of Significance within the application area (DPLH, 2021). 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.

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.

Methodology DPLH (2021)

4. References

- Argyle Diamonds (2021) Information provided to support clearing permit application 4532/10.
- DBCA (2020) Priority Ecological Communities for Western Australia Version 29. Prepared by Species and Communities Program, Department of Biodiversity, Conservations and Attractions, 5 May 2020.
- DPLH (2021) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage.
<http://maps.daa.wa.gov.au/AHIS/> (Accessed 21 June 2021).
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske (2004) Flora and Vegetation Survey, Expansion of Waste Dumps and Area Associated with Underground Expansion near Limestone Creek. Report prepared for Argyle Diamond Mines Pty Ltd, by Mattiske Consulting Pty Ltd, March 2004.
- Payne, A.L. and Schoknecht, N. (2011) Land Systems of the Kimberley Region, Western Australia. Department of Agriculture and Food, Western Australia. Technical Bulletin 98, 250p.
- Rio Tinto (2020) The Iconic Argyle Diamond Mine Delivers Its Final Production. Access online at <https://www.riotinto.com/news/releases/2020/The-iconic-Argyle-diamond-mine-delivers-its-final-production>

5. Glossary

Acronyms:

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)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , 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:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T	<p>Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).</p> <p>Threatened fauna is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>Threatened flora is flora that has been declared to be ‘likely to become extinct or is rare, or otherwise in need of special protection’, pursuant to section 23F(2) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>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.</p>
CR	<p>Critically endangered species Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EN	<p>Endangered species Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
VU	<p>Vulnerable species Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EX	<p>Presumed extinct species Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in</p>

Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

- IA Migratory birds protected under an international agreement**
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 the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and 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 indigenous to Western Australia.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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 clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.