



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5624/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Silver Lake Resources Limited

### 1.3. Property details

Property: Mining Lease 20/55  
Mining Lease 20/183  
Mining Lease 20/195  
Mining Lease 20/208  
Mining Lease 21/8  
Mining Lease 21/72

Local Government Area: Shire of Cue

Colloquial name: Murchison Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 18 July 2013

## 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 and are useful to look at vegetation in a regional context. The following Beard vegetation associations are located within the application area (GIS Database):

18: Low woodland; mulga (*Acacia aneura*) and  
313: Succulent steppe with open scrub; scattered *Acacia sclerosperma* and *A. victoriae* over bluebush.

The application area comprises three separate areas known as Comet, TMC Katies and Friars. A Level 1 flora and vegetation survey has been undertaken over the majority of the Comet area. This was undertaken by Coffey Environments (Coffey) on 16 and 18 January 2012 (Coffey, 2012c). Vegetation quadrats established in this survey were revisited during baseline vegetation monitoring undertaken by Coffey on 25 April 2012 (Coffey, 2012a). Vegetation mapping from the January 2012 survey was updated and the following five vegetation associations were identified in the Comet portion of the application area (Coffey, 2012a):

1. MW1  
*Acacia ? caesaneura*, *Acacia craspedocarpa* and *Acacia incurvaneura* low open woodland over scattered shrubs dominated by *Eremophila* species over *Aristida contorta* very open grassland on red fine-grained clayey, loam.

2. MW2  
*Acacia incurvaneura* low open woodland over *Eremophila*, *Acacia* and *Ptilotus* dominated open shrubland to scattered shrubs over scattered low shrubs dominated by *Maireana* species over *Aristida contorta* very open grassland on pink/red fine-grained clay, loam with white granite and quartz rocks, with small areas of exposed bedrock.

3. MW3  
*Acacia ? caesaneura*, *Acacia ramulosa* var. *ramulosa* and *Acacia incurvaneura* low woodland over *Eremophila forrestii* subsp. *forrestii* shrubland over open grassland dominated by various grass species on red fine-grained loamy clay.

4. ES1  
*Eremophila macmillaniana* and *Acacia oswaldii* (variant) shrubland on skeletal, rocky red/brown loam with exposed basalt bedrock.

5. ES2  
*Eremophila exilifolia* and *Acacia oswaldii* (variant) shrubland on skeletal rocky red loam.

Flora and vegetation surveys have not been undertaken over the TMC Katies and Friars areas.

<b>Clearing Description</b>	<p>Silver Lake Resources Limited (Silver Lake) has applied to clear 42 hectares within an application area of approximately 760 hectares (approximately 147, 286 and 327 hectares for Friars, TMC Katies and Comet, respectively) (GIS Database). The application area is located approximately 20 kilometres south east of Cue at its closest point (GIS Database).</p> <p>The purpose of the application is for mineral production and includes run of mine (ROM) pad, waste dump, access tracks, road realignment, pit extensions and development and lowdown areas. The proposed clearing is located within and adjacent to existing disturbed areas and includes approximately 11.45 hectares at Comet, 1.1 hectares at Friars and 27.52 hectares at TMC Katies. Clearing will be by mechanical means.</p>
<b>Vegetation Condition</b>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);</p> <p>To</p> <p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).</p>
<b>Comment</b>	<p>The vegetation condition at Comet was determined by Coffey (2012a, 2012c). The majority of the Comet area is considered to be in a good to very good condition with degraded or completely degraded areas associated with the pre-existing mine impact areas (Coffey, 2012c). Areas of the vegetation that were considered to be very good were associated with the low rise and wash plain areas where vegetation was considered to be more intact and dense (Coffey, 2012c). For TMC Katies and Friars the vegetation condition has been inferred from aerial photography, the Comet surveys and vegetation and flora surveys undertaken at Silver Lakes nearby Tuckabianna Project Area (approximately 700 metres north west of TMC Katies).</p> <p>Historical mining and exploration disturbance exists in all three areas of the application area (i.e. TMC Katies, Friars and Comet). At Comet mining activities commenced in 1913 and have included both underground and open pit mining (Coffey, 2012c). The application area has also been subject to grazing, including feral goats (Coffey, 2012c).</p> <p>The January 2012 flora and vegetation survey at Comet was not undertaken during the optimal time. Although Cue had received rainfall in December and in early January, it was not considered enough, nor had enough time elapsed to allow the germination and/or flowering of annuals, geophytes, ephemerals and flowering or fruiting for perennial species (Coffey, 2012c). Therefore, annuals, geophytes, ephemerals were under represented and some flora species were not identified to species level or beyond. The flora identification process was considered to be 80% accurate and it was estimated that 70% of the total flora that may potentially occur in the survey area were recorded (Coffey, 2012c). The April 2012 survey occurred after above average rainfall for March which then allowed for germination and growth of some annuals and ephemerals, due to the lapse between the survey timing and the rainfall (approximately three to five weeks) (Coffey, 2012a). As a result, an increase in the species composition of the quadrats was recorded. The rainfall was still not sufficient to promote all of the expected annuals and ephemerals in the survey area to germinate and/ or flower (Coffey, 2012a). Following this survey, the flora identification process was considered to be 90% to 95% accurate and it was estimated that close to 80% of the total flora that may potentially occur in the survey area were recorded (Coffey, 2012a).</p> <p>The January and April 2012 flora and vegetation surveys did not survey previously disturbed areas (i.e. old ROM pads, tailing facilities) as these were cleared or had previously been cleared and no native flora species were present or the flora species present did not represent a natural vegetation association (Coffey, 2012c). In addition, the majority of these areas were deemed unsafe to visit (i.e. old pits, wash-outs, cave-ins) (Coffey, 2012c).</p>

### 3. Assessment of application against clearing principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>Flora and vegetation surveys have been conducted in the Comet portion of the application area but not the Friar and TMC Katies portions of the application area. Flora and vegetation surveys have also been undertaken at Silver Lakes nearby Tuckabianna Project. These were conducted by Coffey on 16 to 17 January 2012 and 25 April 2012 (Coffey, 2012b; Coffey, 2012d). Tuckabianna is located approximately 700 metres north west of the TMC Katies portion of the application area. Friars is located approximately 3.8 kilometres east of Comet and approximately 7.3 kilometres south, south west of Tuckabianna (GIS Database). According to Silver Lake (2013), Friars is flat with no hills or significant landforms and TMC Katies is located on a mild ridge. This is consistent with descriptions of quadrats surveyed at Comet (flats, slopes and rise/hill/ridge) and Tuckabianna (flats and plains) (Coffey, 2012c; Coffey, 2012d). Aerial imagery also indicates the landform and vegetation of Friar and TMC Katies is likely to be similar to that of Comet and Tuckabianna (GIS Database). The results of the Comet and Tuckabianna surveys can therefore be used to provide an indication of the vegetation and flora at Friar and TMC Katies.</p> <p>No known Threatened Ecological Communities occur within the application area (GIS Database) and none were recorded during the Comet or Tuckabianna vegetation surveys (Coffey, 2012a; Coffey 2012b; Coffey, 2012c; Coffey, 2012d). Available databases show the Friars portion of the application area is located on the western periphery of the Priority 1 Lake Austin vegetation complexes (banded ironstone formation) Priority Ecological Community (PEC) (GIS Database). As flora and vegetation surveys have not been conducted at Friars it is not known whether the vegetation represents this PEC or whether the vegetation is unique or restricted. The proposed clearing at Friars involves no more than 1.1 hectares for realigning a road adjacent to the existing open pit. Based on the small area of clearing in relation to the total area of the PEC and its buffer (8,416 hectares) (GIS Database) and its location within the existing mine footprint, it is unlikely the proposed clearing will have a significant impact on the Lake Austin vegetation complexes PEC. Potential impacts to the</p>
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vegetation at Friars may be minimised by the implementation of a condition that limits clearing at Friars to no more than 1.1 hectares.

Vegetation in the Comet survey area can be broadly described as Mulga woodland and *Eremophila* shrubland. The *Eremophila* shrubland is located on rocky substrate on a small rise in the western part of application area (Coffey, 2012c). Vegetation was and may be present in the previously disturbed area areas and was considered to mainly consist of chenopod shrubs and weeds (Coffey, 2012c). The vegetation at Tuckabianna is broadly described as Mulga (*Acacia* species) woodland over scattered shrubs dominated by *Eremophila* species over scattered grasses and herbs and was classified into five vegetation associations (Coffey, 2012d). According to Coffey (Coffey, 2012c; Coffey, 2012d), vegetation at Comet and Tuckabianna is well represented in the areas adjoining the survey areas.

The April 2012 vegetation survey conducted at Comet recorded a total of 55 taxa from 25 genera and 14 families within the survey area (Coffey, 2012a). No introduced species were recorded during the January and April 2012 surveys, however, introduced annual and ephemerals are expected to occur after sufficient rainfall and introduced species may also occur in the previously disturbed areas (Coffey, 2012c). At Tuckabianna, the April 2012 survey recorded a total of 52 taxa from 26 genera and 17 families within the survey area (Coffey, 2012b). One introduced species, the Pie Melon (*Citrullus lanatus*), was recorded. The flora species recorded from the Comet and Tuckabianna are common species from the Murchison region and are represented in adjoining vegetation (Coffey, 2012c; Coffey, 2012d).

No Threatened Flora species have been recorded within the application area (GIS Database) or were recorded during the January and April 2012 vegetation surveys at Comet (Coffey, 2012a; Coffey, 2012c). Two Priority Flora species, *Acacia speckii* (Priority 4) and *Dodonaea amplisemina* (Priority 4), have been recorded within the Comet portion of the application area (GIS Database; Coffey, 2012a; Coffey 2012c). No Threatened or Priority Flora species were recorded during the January and April 2012 Tuckabianna surveys (Coffey, 2012b; Coffey 2012d).

*Acacia speckii* was recorded during the January and April 2012 surveys at Comet from numerous locations associated with the small rocky rise near the western boundary of the survey area (Coffey, 2012a; Coffey, 2012c). A total of 194 plants were recorded at four locations (Coffey, 2012a). *Acacia speckii* occurs on rocky soils over granite, basalt or dolerite on rocky hills or rises and is known from 28 records within the Gascoyne, Murchison and Yalgoo bioregions (Western Australian Herbarium, 2013).

*Dodonaea amplisemina* was recorded as one individual during the April 2012 survey, however, further plants may be recorded if more intensive searches were undertaken (confirmation of this species was not possible at the time of the survey) (Coffey, 2012a). *Dodonaea amplisemina* occurs on red-brown sandy clay on basalt and gabbro and banded ironstone or on dolerite and quartzite on rocky hills and is known from 31 records within the Avon Wheatbelt, Gascoyne, Murchison and Yalgoo bioregions (Western Australian Herbarium, 2013).

Silver Lake (2013) state that both of these species will be avoided. According to Naturemap (DEC, 2013), one Threatened Flora species and 13 Priority Flora species have been recorded within an approximate 20 kilometre radius of the application area. Given that conservation significant flora species have been recorded within the local area and were recorded during the Comet vegetation surveys, Threatened and Priority Flora may occur in the unsurveyed portions of the application area. Potential impacts to Threatened and Priority Flora species may be minimised by the implementation of flora management conditions.

According to Naturemap (DEC, 2013), nine mammal, 130 avian, 24 reptile and eight invertebrate species have been recorded within an approximate 20 kilometre radius of the application area. Level 1 fauna assessments at Comet and Tuckabianna indicate vertebrate fauna assemblages likely to be recorded within the survey areas are likely to be similar to those found in neighbouring areas due to the availability of fauna habitats in surrounding areas (Coffey, 2012c; Coffey, 2012d). These assessments also state that habitats within the survey areas are widespread on both a local and regional scale.

Based on the above and given vegetation is adjacent to historical mining disturbance, the application area is not expected to comprise a higher biological diversity than surrounding areas. However, the absence of surveys over more than half of the application area (i.e. Friars, TMC Katies and some of Comet) does bring a level of uncertainty to the assessment of the biological diversity of the application area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** Coffey (2012a)  
Coffey (2012b)  
Coffey (2012c)  
Coffey (2012d)  
DEC (2013)  
Silver Lake (2013)  
Western Australian Herbarium (2013)  
GIS Database:  
- Reedy 50cm Orthomosaic - Landgate 2005  
- Threatened and Priority Flora  
- Threatened Ecological Sites Buffered

**(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.**

**Comments Proposal is not likely to be at variance to this Principle**

A Level 1 fauna assessment was undertaken over the majority of the Comet area by Coffey on 16 and 18 January 2012 (Coffey, 2012c). Site based fauna assessments have not been conducted for the Friar and TMC Katies portions of the application area. A Level 1 fauna assessment was also undertaken by Coffey on 16 and 18 January 2012 at Tuckabianna (Coffey, 2012d). Friar and TMC Katies have been covered by a desktop based fauna assessment conducted as part of a larger baseline biological desktop assessment over Silver Lake's Greater Murchison Project area. This was conducted by Ecologia Environment (Ecologia) in September 2011 and incorporated the application area (Ecologia, 2011). The results of the Coffey and Ecologia assessments are, therefore, considered applicable to the Friar and TMC Katies areas.

Ecologia (2011) used land system mapping and aerial photography to assess potential fauna habitats in Silver Lake's Greater Murchison Project area. Three broad fauna habitats were mapped including:

- salt marsh and/or halophyte shrublands;
- predominately acacia woodland on various stony or hard surfaces; and
- sand plains with acacia shrublands (Ecologia, 2011).

However, only the predominately acacia woodland on various stony or hard surfaces was mapped over the application area. According to Ecologia (2011), this represents the largest fauna habitat in the local and regional area, and typically consists of acacia woodland, often mulga (*Acacia aneura*) on stony or clay soil. It incorporates various landforms (such as flat plains, rocky granite domes, breakaways and hills) and differing woodland density varying from true woodland structure at medium to high density, to open plains largely devoid of any trees (Ecologia, 2011). This habitat types is likely to comprise more discrete fauna habitats.

Two fauna habitats were identified by Coffey at Comet. These included Mulga woodland and rock ridge or slope and were considered to be in good condition. Some areas of the site have been degraded by mining, exploration and grazing (goats) (Coffey, 2012c). One fauna habitat, Mulga woodland, was identified at Tuckabianna (Coffey, 2012d). According to Coffey (2012c, 2012d), these habitats are widespread both locally and regionally. The fauna habitats were also assessed on their potential to support short range endemic (SRE) invertebrates. There were no drainage lines or rocky outcrops that typically provide habitat for a wide variety of SRE invertebrates, although the rocky ridges at Comet may contain SRE invertebrate species (Coffey, 2012c; Coffey, 2012d). However, as the fauna habitats on the survey area are also abundant in a regional context, it would be reasonable to presume that invertebrates present on the site are also present in adjacent habitat (Coffey, 2012c; Coffey, 2012d). Silver Lake (2013) state that ridges will be avoided where possible.

No evidence of conservation significant fauna species were noted in the Coffey Comet and Tuckabianna fauna assessments. According to Coffey (2012c, 2012d), eight conservation significant fauna species were assessed as having the possibility of occurring within the Comet and Tuckabianna areas. There is suitable habitat for these species in the survey area, however, this habitat is widely available in adjacent areas and the region (Coffey, 2012c; Coffey, 2012d). Given the surrounding area is mostly uncleared and parts of the application area have already been disturbed it is considered unlikely that these species would be significantly impacted by the proposed clearing or that the application area represents significant habitat for these species.

No evidence of the Malleefowl (*Leipoa ocellata*) (Vulnerable; Schedule 1) was recorded at Comet or Tuckabianna and Coffey considered it unlikely that this species would occur in the survey areas (Coffey, 2012c; Coffey, 2012d). Ecologia (2011) notes that it predominately occurs further south in its distribution, and it is unlikely to persist within close proximity to the project area, however, does recommend that targeted searches for this species are undertaken. According to Naturemap (DEC, 2013), a Malleefowl record occurs approximately five kilometres north east of the application area. Given targeted searches have not been undertaken, there is the possibility of Malleefowl mounds occurring within the application area. Potential impacts to this species may be minimised by the implementation of a fauna management condition.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** DEC (2013)  
Ecologia (2011)  
Coffey (2012c)  
Coffey (2012d)  
Silver Lake (2013)

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

**Comments Proposal may be at variance to this Principle**

According to available databases, there are no records of Threatened Flora within the application area (GIS Database). No Threatened Flora was recorded during the Comet and Tuckabianna flora and vegetation surveys undertaken in January and April 2012 (Coffey, 2012a; Coffey 2012b; Coffey, 2012c; Coffey, 2012d). Available databases show there are four records of Threatened Flora within 20 kilometres of the application

area, with the closest record being approximately 19 kilometres north west of the application area (GIS Database). According to Naturemap (DEC, 2013), these records are *Eremophila rostrata* subsp. *rostrata*. This species occurs on saline quartzite loams on hills and flats and is known from seven records within the Eastern Murchison subregion (Western Australian Herbarium, 2013). According to Coffey (2012c, 2012d), this species is not expected to occur within the survey area due to its restricted distribution and known habitat requirements (i.e. saline quartzite hills).

Given the nearby occurrence of this species and the absence of flora and vegetation surveys over more than half the application area, there is the possibility that this species may occur within the application area. Potential impacts to this species may be minimised by the implementation of a flora management condition.

Based on the above, the proposed clearing may be at variance to this Principle.

**Methodology** Coffey (2012a)  
Coffey (2012b)  
Coffey (2012c)  
Coffey (2012d)  
DEC (2013)  
Western Australian Herbarium (2013)  
GIS Database:  
- Threatened and Priority 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.**

**Comments Proposal is not likely to be at variance to this Principle**

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 195 kilometres east, south east of the application area (GIS Database).

No TECs were recorded during the Comet and Tuckabianna flora and vegetation surveys undertaken in January and April 2012 (Coffey, 2012a; Coffey 2012b; Coffey, 2012c; Coffey, 2012d).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** Coffey (2012a)  
Coffey (2012b)  
Coffey (2012c)  
Coffey (2012d)  
GIS Database:  
- Threatened Ecological Sites Buffered

**(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.**

**Comments Proposal is not at variance to this Principle**

The application area falls within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99.7% of the pre-European vegetation remains (see table) (GIS Database, Government of Western Australia, 2013).

The vegetation of the application area has been mapped as Beard vegetation associations 18 and 313 (GIS Database). Over 90% of these Beard vegetation associations remain at both a state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared. Based on aerial imagery, the vegetation within the application area is neither a remnant itself nor does it form part of any remnants within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Lands
IBRA Bioregion – Murchison	28,120,587	28,044,823	~99.73	Least Concern	7.70
Beard veg assoc. – State					
18	19,892,305	19,843,727	~99.76	Least Concern	6.29
313	68,843	65,261	~94.8	Least Concern	-
Beard veg assoc. – Bioregion					
18	12,403,172	12,363,252	~99.7	Least Concern	4.96
313	68,843	65,261	~94.8	Least Concern	-

\* Government of Western Australia (2013)

\*\* Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2013)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Pre-European Vegetation  
- Reedy 50cm Orthomosaic - Landgate 2005  
- Wynyangoo 50cm Orthomosaic - Landgate 2005

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments Proposal is at variance to this Principle**

There are no permanent wetlands or watercourses within the application area, however there are several minor, non perennial watercourses that cross into the application area (GIS Database). Available databases show that numerous minor drainage lines occur in the local area (GIS Database). Some of these eventually drain into Lake Austin, located approximately seven kilometres south west of the application area at its closest point (GIS Database).

In the Comet and Friars areas the minor non perennial watercourses have been impacted by historic mining operations (GIS Database). At TMC Katies the watercourses cross slightly into the boundary of the application area and comprise very little of the application area (GIS Database). A review of aerial imagery indicates vegetation growing along these watercourses is similar to surrounding vegetation (GIS Database).

The vegetation surveys undertaken at Comet identified two areas that may be washout areas for increased surface water movement during storm or high rainfall events, however, vegetation along these washout areas were not considered to be riparian vegetation (Coffey, 2012c). The vegetation survey at Tuckabianna also did not identify any riparian vegetation (Coffey, 2012d).

The proposed clearing is therefore considered unlikely to have significant additional impacts on these watercourses.

Based on the above, the proposed clearing is at variance to this Principle.

**Methodology** Coffey (2012c)  
Coffey (2012d)  
GIS Database:  
- Geodata, Lakes  
- Hydrography, linear  
- Reedy 50cm Orthomosaic - Landgate 2005  
- Wynyangoo 50cm Orthomosaic - Landgate 2005

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments Proposal may be at variance to this Principle**

The application area has been mapped as occurring on the Gabanintha, Violet and Yanganoo land systems (GIS Database). Creeks and drainage tracts in the Gabanintha land system are mildly susceptible to water erosion where degraded (Curry et al., 1994). In the Violet land system drainage tracts are moderately

susceptible to accelerated erosion and sandy surfaced gravelly plains are slightly susceptible to accelerated erosion (Curry et al., 1994). The major unit (hardpan plains) of the Yanganoo land system is locally susceptible to accelerated erosion when severely degraded (Curry et al., 1994). Based on the above there is potential for erosion to occur, particularly in existing disturbed (i.e. degraded) areas of the application area. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may be at variance to this Principle.

**Methodology** Curry et al. (1994)  
GIS Database:  
- Rangeland Land System Mapping

**(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.**

**Comments Proposal is not likely to be at variance to this Principle**

The application area does not lie within any conservation areas or Department of Parks and Wildlife managed lands (GIS Database). The nearest conservation area is the ex-Lakeside pastoral lease, which is former leasehold proposed for conservation. It is located approximately 20 kilometres west of the application area (GIS Database). At this distance the proposed clearing is not likely to impact the environmental values of the proposed conservation area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** GIS Database:  
- DEC Tenure

**(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.**

**Comments Proposal is not likely to be at variance to this Principle**

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). There are no permanent wetlands or watercourses within the application area, however there are several minor, non perennial watercourses that cross into the application area (GIS Database). There are numerous minor non-perennial watercourses within the surrounding area (GIS Database). The land systems of the application area are mildly to moderately susceptible to erosion (Curry et al., 1994) and the increased sedimentation may lead to some deterioration in the local surface water quality if not managed properly. Potential impacts to surface water quality as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

According to available databases, groundwater salinity within the application area is between 500 and 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered marginal to brackish. The proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** Curry et al. (1994)  
GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrography, linear  
- Public Drinking Water Source Areas (PDWSAs)

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

**Comments Proposal is not likely to be at variance to this Principle**

The application area is located within the Murchison River catchment area (GIS Database). Given the size of the area to be cleared (42 hectares) in relation to the size of the catchment area (10,380,649 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

With an average annual rainfall of 233.2 millimetres at Cue (BoM, 2013) and an average annual evaporation rate of approximately 3,500 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** BoM (2013)  
GIS Database:

- Evaporation Isoleths
- Hydrographic Catchments – Catchments

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

### Comments

There are two native title claims over the area under application (GIS Database). These claims (WC99/10 and WC99/46) have been registered with the Native Title Tribunal on behalf of the claimant group (GIS Database). 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*.

According to available databases, there are no registered Aboriginal Sites of Significance within the application area (GIS Database). 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 Environment Regulation (formerly the Department of Environment and Conservation) and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 17 June 2013 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

### Methodology

- GIS Database:
- Aboriginal Sites of Significance
  - Native Title Claims – Registered with the NNTT

## 4. References

- BoM (2013) Climate Statistics for Australian Locations. A Search for Climate Statistics for Cue, Australian Government Bureau of Meteorology, viewed 11 July 2013, <[http://www.bom.gov.au/climate/averages/tables/cw\\_012045.shtml](http://www.bom.gov.au/climate/averages/tables/cw_012045.shtml)>.
- Coffey (2012a) Baseline Vegetation Monitoring Comet Project Area. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated September 2012.
- Coffey (2012b) Baseline Vegetation Monitoring Tuckabianna Project Area. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated September 2012.
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- Coffey (2012d) Level 1 Flora and Fauna Assessment Tuckabianna Project, Silver Lake. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated March 2012.
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## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), Western Australia
<b>DIA</b>	Department of Indigenous Affairs



<b>DLI</b>	Department of Land Information, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DoE</b>	Department of Environment (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI Act</b>	Rights in Water and Irrigation Act 1914, Western Australia
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia
<b>TEC</b>	Threatened Ecological Community

### **Definitions:**

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia*} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia*} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which

are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

**P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

**P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

**Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)**

**EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

**EX(W)** **Extinct in the wild:** A native species which:  
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or  
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

**CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

**EN** **Endangered:** A native species which:  
(a) is not critically endangered; and  
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

**VU** **Vulnerable:** A native species which:  
(a) is not critically endangered or endangered; and  
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

**CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.