



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3202/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Saracen Gold Mines Pty Ltd

1.3. Property details

Property: Mining Lease 31/172
Mining Lease 31/231

Local Government Area: Shire Of Menzies

Colloquial name: Wallbrook Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
90		Mechanical Removal	Mineral Production, and associated works.

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 at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. The following Beard Vegetation Association is located within the application area (GIS Database):

400: Succulent steppe with open low woodland; mulga over bluebush (Shepherd, 2007).

Alexander Holm and Associates (2009) undertook a flora and vegetation survey that covered the Wallbrook Project area, which included the proposed Crusader, Eleven Bells and Redbrook mines and surrounding areas. Alexander Holm and Associates (2009) identified five land units within the application area that correspond with five different vegetation communities.

Vegetation Communities

Alexander Holm and Associates (2009) determined that the survey area contains the following vegetation communities:

BLSS: Bladder saltbush low shrublands

This vegetation community consists of land units 3a, 5 and 6.

CPBS: Calcyphytic pearl bluebush shrublands

This vegetation community consists of land units 2a, 2b, 3a and 3b. This land unit is determined by CALM (2002) to be an 'ecosystem at risk', primarily due to overgrazing and feral animals. Overall, this unit is reported as being a widespread community with a regular occurrence in a regional context.

PSAS: Sago bush low shrublands

This vegetation community consists of land units 3a and 6.

PXHS: Plain mixed halophyte low shrublands

This vegetation community consists of land unit 3a. This land unit is determined by CALM (2002) to be an 'ecosystem at risk', primarily due to overgrazing and feral animals. Overall, this unit is reported as being a widespread community with a regular occurrence in a regional context.

SGRS: Sandy granitic *Acacia* shrublands

This vegetation community consists of land units 1b and 3c.

Land Units

Alexander Holm and Associates (2009) determined that the survey area contains the following land units:

2a) Low rises and gently sloping plains on volcanic rocks:

Very scattered to scattered, low or mixed height shrublands dominated by *Maireana sedifolia* often with prominent low tree or tall shrub layers of *Casuarina pauper*, *Acacia quadrimarginea* or *A. aneura*. Other common shrubs are *Ptilotus obovatus*, *Hakea preissii*, *Maireana pyramidata*, *M. georgei*, *M. triptera*, *Atriplex vesicaria*, *Solanum lasiophyllum*, *Dodonea lobulata*, *Eremophila* spp., *Scaevola spinescens* and the grass *Enneapogon caeruleus*.

This land unit correlates to the CPBS vegetation community. Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context.

2b) Low gravelly rises, minor breakaways and gently sloping plains:

Very scattered to scattered, low or mixed height shrublands dominated by *Maireana sedifolia* with numerous other shrubs including *Acacia quadrimarginea*, *A. tetragonophylla*, *Casuarina pauper*, *Ptilotus obovatus*, *Dodonea lobulata*, *Maireana triptera* and *Enchylaena tomentosa*.

This land unit correlates to the CPBS vegetation community. Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context.

3a) Stony weakly saline plains:

Isolated to scattered, low halophytic shrublands dominated by *Atriplex vesicaria* or *Maireana pyramidata* (occasionally *Maireana sedifolia*) with numerous other shrubs commonly *Maireana georgei*, *M. glomerifolia*, *Hakea preissii*, *Ptilotus obovatus*, *Tecticornia halocnemoides*, *Frankenia* sp., *Scaevola spinescens* and *Enchylaena tomentosa*.

This land unit correlates to the BLSS, CPBS, PSAS and PXHS vegetation communities. Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context.

3c) Plains on granitic rocks:

Very scattered, tall shrublands of *Acacia quadrimarginea* (occasionally with *A. aneura*) and diverse, low shrubs dominated by *Eremophila compacta*, *Ptilotus obovatus* and *Chrysocephalum puteale*, and also annual grasses.

This land unit correlates to the SGRS vegetation community. Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context.

6) Drainage lines:

Very scattered to scattered, low shrublands dominated by halophytic shrubs *Atriplex vesicaria* or *Maireana pyramidata* with *Maireana georgei*, *Eremophila decipiens*, *Hakea preissii*, *Casuarina pauper*, *Atriplex bunburyana* and *Dodonea lobulata*.

This land unit correlates to the BLSS and PSAS vegetation communities. Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context.

Clearing Description	<p>Saracen Gold Mines Pty Ltd (hereafter referred to as Saracen Gold) have applied for a Purpose Permit to clear up to 90 hectares within a 329 hectare area. The proposed clearing would allow the proponent to carry out mineral production (establishment of five pits, two waste rock dumps, run-of-mine (ROM) pads and additional infrastructure), and associated activities/works. The application area is located approximately 105 kilometres north-east of Kanowna.</p> <p>Vegetation clearing will be conducted using mechanical means.</p>
Vegetation Condition	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management;</p> <p>to</p> <p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).</p>
Comment	<p>The vegetation condition rating is derived from information provided by Alexander Holm and Associates (2009).</p>

3. Assessment of application against clearing principles

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

Comments	<p>Proposal is not likely to be at variance to this Principle</p> <p>The application area is located within the Eastern Murchison (MUR1) subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Eastern Murchison subregion is characterised by vegetation dominated by Mulga woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and <i>Halosarcia</i> shrublands (CALM, 2002).</p> <p>Alexander Holm and Associates (2009) undertook a flora and vegetation survey of the application area between 13 to 17 March 2009. A total of 135 flora species were found during the flora survey (nine of which were only identified to the genera level) (Alexander Holm and Associates, 2009). No species of Declared Rare Flora (DRF) or Priority Flora were collected during the survey of the Wallbrook Project area (Alexander Holm and Associates, 2009).</p> <p>Ten vegetation communities associated with eleven land units were identified within the survey area and the condition of the vegetation was defined as ranging between 'Very Good' and 'Degraded', with the majority of the survey area ranging between 'Very Good' and 'Good' vegetation condition (Alexander Holm and Associates, 2009). Five vegetation communities (and five land units) were present within the application area; these included the BLSS (corresponding with land units 3a, 5 and 6), CPBS (corresponding with land units 2a, 2b, 3a and 3b), PSAS (corresponding with land units 3a and 6), PXHS (corresponding with land unit 3a) and SGRS (corresponding with land units 1b and 3c) (Alexander Holm and Associates, 2009). Vegetation communities CPBS and PXHS were determined to be 'ecosystems at risk' due to overgrazing and feral animals (CALM, 2002); however, Alexander Holm and Associates (2009) determined that the land units that the vegetation communities correlate to are reported as being widespread with regular representation occurring in a regional context.</p>
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No information regarding weed (introduced) flora species within the application area was available in the report by Alexander Holm and Associates (2009); however, the presence of weed species was mentioned in the Bamford Consulting Ecologists (2002) fauna report (the application area is intersected by the fauna survey area). In order to minimise the spread of weed species and the risk of introducing weed species into the application area, it is recommended that, should the permit be granted, a condition be imposed on the permit for the purposes of weed management.

A fauna survey of the Carouse Dam to Safari Haul Road was conducted by Bamford Consulting Ecologists (2002) between 6 to 10 May 2002 for a clearing permit application (associated with CPS 1877/1). The application area is intersected by the fauna survey area. Five species of reptile, 49 species of bird (including ten species of waterbird) and 9 species of mammal (including 4 species of introduced mammal) were identified during the survey (Bamford Consulting Ecologists, 2002). Bamford Consulting Ecologists (2002) stated that the Carouse Dam to Safari Haul Road survey area could be expected to be moderately rich in reptiles and birds with depauperate numbers of mammals due to the extensive impacts caused by introduced mammals. Overall, the survey area was determined to be typical of a broad area of the Eastern Goldfields (Bamford Consulting Ecologists, 2002).

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

Methodology Alexander Holt and Associates (2009).
Bamford Consulting Ecologists (2002).
CALM (2002).
GIS Database:
- Interim Biogeographic Regionalisation for Australia.
- Interim Biogeographic Regionalisation for Australia (subregions).

(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**
Bamford Consulting Ecologists (2002) conducted a vertebrate fauna survey for the Carouse Dam to Safari Haul Road between 6 to 10 May 2002. The application area is intersected by the fauna survey area, which is comprised of fauna habitat types that may occur within the application area. These include:

Breakaway:
Consists of low scarps formed in areas with a lateritic crust. These areas often support a unique assemblage of fauna species.

Drainage Lines – Mulga woodlands:
Consists of a broad, poorly defined channel vegetated by dense Mulga woodland in the mid and northern part of the survey area. Despite the degradation seen in these areas caused by the introduction of weed species and grazing, the complexity of this habitat is expected to be associated with a high diversity of fauna species, particularly birds.

Drainage Lines – Salt Lake features:
Consists of broad, sparsely vegetated drainage line closely associated with salt lake features.

Dunefield:
Consists of mixed *Acacia* shrubland recorded on red loamy sands on the northern end of Lake Rebecca. This habitat is very heterogeneous, but generally included mature *Acacia* trees with an open understorey.

Hills:
Consists of poorly vegetated banded ironstone formation (BIF) ranges. The weathered state of much of the surface BIF rock means that it contains habitat suitable for a wide range of smaller vertebrate species, especially reptiles.

Salt Lake feature – Samphire:
Consists of two salt lake features; Lake Rebecca to the south and Lake Raeside to the north. The Samphire habitat consists of a band of salt-tolerant plants growing on the edge of salt lakes. Although not expected to be extremely rich in fauna diversity, this habitat often supports some specialist fauna species.

Salt Lake feature – Open Lake:
Consists of two salt lake features; Lake Rebecca to the south and Lake Raeside to the north. The Open Lake habitat consists of the bare salt pan that may or may not be holding water. Whilst dry, the habitat supports very little fauna diversity; however, when the habitat is holding water, it can support a wide range of fauna species (particularly water birds).

Undulating Plains:
Consists of undulating plain vegetated by Chenopod shrublands. These areas generally consist of moderately dense Chenopod species growing on calcareous soils and were not expected to support a high richness of fauna species.

Broad Valley – Mulga woodland:

The broad valley fauna habitats have the broadest coverage within the study area. It consists primarily of Mulga (*Acacia aneura*) growing at various densities with a range of understorey species on loamy soil. The high complexity of this habitat type is expected to be correlated with a high richness of fauna species, although some of the areas observed were degraded from grazing and invading weed species and were therefore are less complex.

Broad Valley – Acacia shrubland:

The broad valley fauna habitats have the broadest coverage within the study area. It consists of extensive areas of *Acacia* shrubland over mixed understorey (predominantly grasses), and was recorded from the northern section of the survey area near Lake Raeside. The vegetation type was on sandy soils with calcareous aggregate patches. The high complexity of this habitat type is expected to be correlated with a high richness of fauna species, although some of the areas observed were degraded from grazing and invading weed species and were therefore less complex.

Broad Valley – Dampland:

The broad valley fauna habitats have the broadest coverage within the study area. It consists of a number of Dampland areas (less than 2 hectares in size) vegetated by extremely dense *Acacia* shrubland and possibly support small vertebrate fauna species not present elsewhere in the study area.

Broad Valley – Eucalypt woodland:

The broad valley fauna habitats have the broadest coverage within the study area. It consists of Eucalypt woodland with mixed understorey vegetation type. Although the fauna habitat was restricted to small areas throughout the length of the survey area, it was well represented outside of the survey area. The high complexity of this habitat type is expected to be correlated with a high richness of fauna species, although some of the areas observed were degraded from grazing and invading weed species and were therefore less complex.

The vegetation communities and land units for the application area were described by Alexander Holm and Associates (2009), and these correlate with the descriptions of the following fauna habitats: Breakaway, Drainage Lines – Mulga woodlands, Drainage Lines – Salt Lake features, Undulating Plains and Broad Valley – Mulga woodland.

Although Bamford Consulting Ecologists (2002) mentioned that breakaways (which provide microhabitats) and drainage lines (which provide refuge through the presence of dense vegetation) may be disproportionately significant in enhancing local biodiversity, overall no rare or unusual habitats were present. Additionally, the vertebrate fauna within the survey area are likely to be typical of a broad area of the Eastern Goldfields (Bamford Consulting Ecologists, 2002). Bamford Consulting Ecologists (2002) stated that it was impossible to determine the significance of the project area on conservation significant fauna without all the relevant data; however, they clarified that whilst some habitats within the project area appear to be suitable for some species of conservation significant fauna, the habitats are also well-represented outside of the survey area.

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

Methodology Alexander Holt and Associates (2009).
Bamford Consulting Ecologists (2002).

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

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

No species of Declared Rare Flora (DRF) or any Priority Flora species were identified within the application area (Alexander Holm and Associates, 2009). The nearest locations of DRF to the application area include *Eucalyptus articulata* (located approximately 97 kilometres east south-east of the application area) and *Conospermum toddii* (located approximately 102 kilometres east south-east of the application area) (GIS Database).

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

Methodology Alexander Holt and Associates (2009).
GIS Database:
- Declared Rare and Priority Flora List.

(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

There are no records of Threatened Ecological Communities (TECs) within the area subject to be cleared (GIS Database). The closest TEC is TEC 99: Depot Springs stygofauna community, located approximately 295 kilometres north-west of the proposed clearing area (GIS Database). The proposed clearing is not likely to impact on any known TEC.

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

Methodology GIS Database:
 - Threatened Ecological Communities.

(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 clearing application area falls within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 100% of the pre-European vegetation remains (Shepherd, 2007; GIS Database).

The vegetation within the application area is classified as:

- **Beard Vegetation Association 400:** Succulent steppe with open low woodland; mulga over bluebush (Shepherd, 2007; GIS Database).

As depicted within the table below, the application area does not represent a significant remnant of vegetation in an area that has been extensively cleared (Shepherd, 2007). The proposed clearing will not reduce the extent of Beard Vegetation Association 400 below the recognised threshold level, below which species loss accelerates exponentially at an ecosystem level (EPA, 2000). Therefore the bioregional conservation status for the Murchison bioregion and for the Beard Vegetation Association 400 is of 'Least Concern' (Department of Natural Resources and Environment, 2002).

Although an unknown percentage of the vegetation types within the Murchison bioregion are protected within conservation reserves, the bioregion remains largely uncleared. The proposed clearing is unlikely to impact on the conservation status for Beard Vegetation Association 400 within the Murchison bioregion.

	Pre-European area (hectares)*	Current extent (hectares)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Murchison	28,120,590	28,120,590	~100	Least Concern	~1.06
Beard veg assoc. – State					
400	190,823	190,823	~100	Least Concern	Unknown
Beard veg assoc. – Bioregion					
400	190,823	190,823	~100	Least Concern	Unknown

* Shepherd (2007).

** 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).
 EPA (2000).
 Shepherd (2007).
 GIS Database:
 - Interim Biogeographic Regionalisation of Australia.
 - Pre-European Vegetation.

(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**
 No permanent wetlands and watercourses occur within the application area (GIS Database). However, the application area contains numerous minor non-perennial watercourses, with water draining away from the application area into the surrounding areas (GIS Database). In addition, Lake Rebecca is located approximately 7 kilometres south of the application area, with some of the watercourses draining towards the waterbody (GIS Database). Some of the watercourses within the application area correspond with the Drainage Line land unit, as described by Alexander Holm and Associates (2009). This land unit correlates to the BLSS and PSAS vegetation communities (Alexander Holm and Associates, 2009). Overall, this land unit is reported as being a widespread community with a regular occurrence in a regional context (Alexander Holm and Associates, 2009).

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

The proposed clearing is for mineral production purposes; therefore, the majority of the clearing within the application area will be for mine pits, waste rock dumps and associated infrastructure (Saracen Gold, 2009). As such, these areas are located away from drainage lines and it is unlikely that the vegetation associations growing in, or in association with, the watercourses will be targeted for development (Saracen Gold, 2009). Additionally, the vegetation growing in association with the watercourses was deemed to be widespread with regular occurrence in a regional context so the clearing is unlikely to pose a risk to the conservation status of the flora within the vegetation assemblages (Alexander Holm and Associates, 2009).

Methodology Alexander Holt and Associates (2009).
Saracen Gold (2009).
GIS Database:
- Geodata, Lakes.
- Hydrography, linear.
- RIWI Act, Rivers.

(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

Land system mapping by the Department of Agriculture and Food Western Australia has mapped a variety of land systems for part of the Murchison bioregion as part of the survey of the north-eastern Goldfields (Pringle et al., 1994). Land systems are mapped based on biophysical features such as soil and landform type, geology, geomorphology and vegetation type (Pringle et al., 1994). The proposed clearing area includes two different land systems (GIS Database). A broad description of each land system is given below:

The Gundockerta land system is characterised by extensive, undulating plains generally with abundant stony mantles and less extensive lower alluvial plains with narrow central zones receiving more concentrated run-on (Pringle et al., 2004). Relief is usually less than 15 metres (Pringle et al., 2004). The Gundockerta land system is generally prone to erosion when not protected by a stony mantle (Pringle et al., 2004). The majority of the proposed clearing area has been mapped as the Gundockerta land system (GIS Database).

The Nubev land system is characterised by gently undulating plains and low rises, and level alluvial plains receiving concentrated flow off adjacent uplands (Pringle et al., 2004). Relief is usually less than 15 metres (Pringle et al., 2004). The Nubev land system is generally prone to erosion when not protected by a stony mantle and vegetation (Pringle et al., 2004). A small proportion of the proposed clearing area has been mapped as the Nubev land system (GIS Database).

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

However, the proposed clearing within the application area is associated with the establishment of five pits, two waste rock dumps, ROM pads, a contractor's workshop, an administration building, access roads and associated infrastructure (Saracen Gold, 2009). As such, the mining areas are likely to be bunded to prevent surface water runoff from the surrounding environment from entering the minesite and vice versa. Additionally, the areas that are earmarked for development are located away from drainage lines (Saracen Gold, 2009) and the site generally slopes downwards towards the south-western corner of the application area towards a drainage line (GIS Database). As the pits, waste rock dumps and other infrastructure will be mainly located in the northern and eastern sections of the application area, it is unlikely that the flow of surface water would be impeded by the development of the minesites; rather the water will flow around the bunding on vegetated areas and into the drainage line.

In addition, Saracen Gold (2009) commit to stockpiling vegetation and topsoil for later rehabilitation of the cleared areas and clearing will occur in a progressive fashion in order to minimise the potential for erosion. Progressive rehabilitation of unrequired areas (i.e., areas cleared for a purpose required during the development of the minesites) will occur (Saracen Gold, 2009).

In order to minimise the risk of erosion within the application area, it is recommended that, should the permit be granted, conditions are to be imposed on the permit for the purposes of retaining vegetation and topsoil and conducting staged clearing. With the application of these conditions, it is unlikely that the clearing within the application area would cause appreciable land degradation.

Methodology Pringle et al. (1994).
Saracen Gold (2009).
GIS Database:
- Geodata, Lakes.
- Hydrography, linear.
- Rangeland land system mapping.
- RIWI Act, Rivers.
- Spot Heights.
- Topographic Contours, Statewide.

(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 is not located within a conservation area (GIS Database). The nearest conservation area is the 'A'-class Goongarrie National Park which is located approximately 55 kilometres west of the application area (GIS Database). Given the distance separating the application area and the nearest conservation area, the proposed clearing is unlikely to impact on the conservation values of the Goongarrie National Park.

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

Methodology GIS Database:

- CALM Managed Lands and Waters.

(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

The proposed clearing area is not located within a proclaimed, gazetted or declared management areas or catchments (GIS Database). There are no named watercourses within the proposed clearing area; however, the area contains a number of minor non-perennial watercourses, with water draining away from the application area into the surrounding areas (GIS Database). In addition, Lake Rebecca is located approximately 7 kilometres south of the application area, with some of the watercourses draining towards the waterbody (GIS Database). Surface water runoff only occurs after major, but infrequent, rainfall events (Saracen Gold, 2006). Overall, the proposed clearing is unlikely to increase the turbidity of surface water runoff and lead to the increased sedimentation of Lake Rebecca.

The application area is not located within a Public Drinking Water Source Area (GIS Database). Groundwater within the area under application is deemed saline, with a Total Dissolved Solids measurement of between 3,000 to 7,000 milligrams per litre (GIS Database). The application area experiences an average rainfall of between approximately 200 to 250 millimetres per annum and a high evaporation rate of between approximately 3,000 to 3,200 millimetres per annum (GIS Database). It is unlikely that surface water occurs within the application area or the surrounding areas on a permanent basis, and, as a consequence, recharge to groundwater would likely be low. Overall, the proposed clearing of native vegetation is not likely to have an adverse effect on groundwater quality.

In order to minimise the risk of erosion (and an increase in the turbidity of surface water runoff) within the application area, it is recommended that, should the permit be granted, a condition be imposed on the permit for the purposes of conducting staged clearing.

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

Methodology Saracen Gold (2006).

GIS Database:

- Evaporation Isopleths (Evaporation).
- Geodata, Lakes.
- Groundwater Salinity, Statewide.
- Hydrography, linear.
- Isohyets (Rainfall).
- Public Drinking Water Source Areas (PDWSAs).
- RIWI Act, Rivers.

(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 in areas of relief up to 15 metres within land systems that are prone to erosion when the stony mantle or the vegetation cover is removed (Pringle et al., 1994). However, the application area experiences an average rainfall of between approximately 200 to 250 millimetres per annum and a high evaporation rate of between approximately 3,000 to 3,200 millimetres per annum (GIS Database). Surface water runoff only occurs after major, but infrequent, rainfall events (Saracen Gold, 2006). Given there are some minor non-perennial drainage lines within the application area and Lake Rebecca is located approximately 7 kilometres south of the application area, it is unlikely that surface water occurs within the application area or the surrounding areas on a permanent basis. The clearing associated with the proposal is unlikely to exacerbate the incidence or intensity of flooding within the application area.

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

Methodology DEC (2009).
Pringle et al. (1994).
Saracen Gold (2006).
GIS Database:
- Evaporation Isopleths (Evaporation).
- Hydrography, linear.
- Isohyets (Rainfall).
- RIWI Act, Rivers.

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

Comments There is one native title claim over the area under application; WC99_001 (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenements have 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*.

A submission was received raising concern regarding Aboriginal Sites of Significance being impacted by this proposal. There are no known Aboriginal Sites of Significance within the application area and within 2 kilometres of the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with 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.

An additional submission was received by the Department of Mines and Petroleum for this application, however there were no objections raised with regard to the assessment of the application.

Methodology GIS Database:
- Aboriginal Sites of Significance.
- Native Title Claims.

4. Assessor's comments

Comment

The clearing principles have been addressed and the proposed clearing is at variance to Principle (f), may be at variance to Principle (g), is not likely to be at variance to Principle (a), (b), (c), (d), (h), (i) or (j) and is not at variance to Principle (e).

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of weed management, conducting staged clearing, retaining vegetation and topsoil, record keeping and permit reporting.

5. References

- Alexander Holm and Associates (2009) Environmental Assessment: Proposed Wallbrook mine sites and surrounds. Alexander Holm and Associates Natural Resource Management Services, Western Australia.
- Bamford Consulting Ecologists (2002) Vertebrate fauna of the proposed Carosue Dam - Safari haul road. Bamford Consulting Ecologists, Western Australia.
- CALM (2002) A biodiversity audit of Western Australia's 53 biogeographical subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pringle, H. J. R., Van Vreeswyk, A. M. E. and Gilligan, S. A. (1994) Technical bulletin no. 87: An inventory and condition survey of the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Saracen Gold (2006) Environmental impact assessment, environmental management commitments and procedures. Unpublished Report dated December 2006. Saracen Gold Mines Pty Ltd, Western Australia.
- Saracen Gold (2009) Wallbrook Clearing Permit Application. Advice to the assessing officer, received on 28 July 2009, Saracen Gold Mines Pty Ltd.
- Shepherd, D.P. (2007). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DMP	Department of Mines and Petroleum, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	<i>Environment Protection Act 1986</i> , Western Australia.
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia.
s.17	Section 17 of the <i>Environment Protection Act 1986</i> , Western Australia.
TECs	Threatened Ecological Communities.

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.