AngloGold Ashanti
Australia

Independence Group NL

Tropicana Gold Project

Public Environmental Review

Response to Submissions

April 2010

EPA Assessment No: 1745 EPBC No: 2008/4270

360 environmental

TROPICANA GOLD PROJECT

Response to Submissions and Supplementary Surveys

April 2010

Tropicana Joint Venture

EPA Assessment No: 1745

EPBC No: 2008/4270

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EXECUTIVE SUMMARY

Approvals Process

This document is a Response to Submissions that has been compiled in reply to comments received during the formal public consultation period for the State and Federal environmental approvals process for the Tropicana Gold Project (the Project). The proponent of the Project is the Tropicana Joint Venture (the Joint Venture). The Joint Venture is between AngloGold Ashanti Australia Limited (AngloGold; 70% stakeholder and manager) and Independence Group NL (IGO; 30% stakeholder).

The State and Federal approvals are being sought under the Bilateral Agreement between the State and Federal Governments at a Public Environmental Review (PER) level of assessment. The Project includes the following areas of infrastructure as described in greater detail in the PER and Chapter 1 of this document:

- Operational Area – The granted Mining Leases surrounding the proposed gold mine including the pit(s), waste landforms, stockpiles, tailings storage facility, processing plant, water storage dams, power station, internal roads, administration block(s), aerodrome, village and other supporting infrastructure. The Mining Leases cover a much greater area than that required to install and operate the mining infrastructure;
- Infrastructure Corridor(s) – Access road and communications corridor to link the Operational Area to existing communication and road networks in the Goldfields Region; and,
- Water Supply Area – the Minigwal Trough has been confirmed as an appropriate source of water for the Project.

Consultation with the Public and Regulators

The formal public consultation period for the Project commenced on Monday 28 September 2009 for a period of eight weeks and one day (to account for a public holiday). Eleven formal submissions were received by the Environmental Protection Authority (EPA) for the Project. Two additional submissions were received outside of the formal process – one submission was sent direct to the Joint Venture and one was sent to the EPA, outside of the formal period. This document contains the Joint Venture's response to all 13 submissions (summarised in section 3.1, discussed in full in Section 4).

Other consultation outside of the formal process included:

- Facilitated public information sessions in Perth, Kalgoorlie and Menzies during the first week of November (2, 4 and 5th respectively). The discussion points from these sessions are also included in this document (section 3.2);
- Continued engagement with State and Federal departments and regulators. Formal discussions were held with the Department of Environment and Conservation (DEC) during the public consultation period. These discussions focused on:
    - the adequacy of baseline surveys;
    - the proposed management measures and monitoring strategies; and,
    - the Project's Offset Strategy.
- The Office of the EPA, DEC, Department of Mines and Petroleum and the Department of Indigenous Affairs visited the Project Operational Area on 18 November 2009 to gain first hand experience of the local environment.

Project Progress

There have been no alterations to the Project's proposed maximum extent, mining or processing methodologies or operating life since the publication of the PER. The Joint Venture is currently undertaking a Feasibility Study for the project to optimise aspects of the engineering, design and implementation strategy. It is anticipated the study will be completed in the second half of 2010. Construction is anticipated to commence in late 2010 or early 2011 with the timing contingent on all required approvals being obtained.

Submissions and Responses

Eleven groups/ individuals forwarded 80 specific submission topics to the Joint Venture via the formal EPA process during the public consultation period for the Tropicana Gold Project. Two informal written submissions were received either directly by the EPA or Joint Venture from DEWHA and the Shire of Menzies respectively. The Joint Venture also sort informal community feedback on the Project through series of Public Information Sessions that aimed to engage and update the general community. Consultation with Indigenous groups and their representatives has continued since the PER's release and progress is being made to engage with additional groups who have sought input into the Project. The Joint Venture has continued to meet with various regulators since the PER's publication to address their requests for further information and to progress the development of the Project's offset package.

The submissions and meetings with the public, indigenous groups and regulators covered the following main areas:

- potential impacts to terrestrial ecosystems;
- potential usage restrictions on the Mine Access Road by non-Joint Venture parties;
- heritage protection;
- potential dewatering impacts on gnamma holes and the surrounding environment; and,
- rehabilitation and closure.

Since the PER's publication, the Joint Venture has carried out or completed a number of supplementary surveys and analysis for terrestrial and subterranean fauna to specifically address issues raised by DEC's Environmental Management Branch. The surveys have included habitat and fragmentation assessment for Sandhill Dunnarts, Marsupial Moles, Mygalomorph spiders and Troglofauna. These additional assessments support the PER and demonstrate that available habitats extend beyond the disturbance footprint and that habitat fragmentation should not be a significant issue arising from the Project.

During the Public Information Sessions the Joint Venture confirmed the likely requirements of non-Joint Venture use of the Mine Access Road (to be installed along the Pinjin Infrastructure Corridor). The Mine Access Road will be built over tenure granted to the Joint Venture under the *Mining Act 1978*. The Joint Venture will be required to manage the road for safety and environmental concerns. The Joint Venture will not be blocking the public's use of existing tracks in the area. The Joint Venture will negotiate access agreements with other groups/ private individuals who may require use of the Mine Access Road. The agreements will require compliance legal obligations and approvals conditions associated with the road and the Joint Ventures policies, procedures relating to the road.

As described in the PER, the Joint Venture has undertaken archaeological and ethnographic surveys across the Projects proposed disturbance footprint to the standard required by the Dept. of Indigenous Affairs and the EPA Guidelines. The Joint Venture has avoided disturbance to currently known archaeological sites through the design and layout of the mining operation. All Indigenous heritage surveys carried out to support the PER were

undertaken in accordance with Goldfield Standard Heritage Agreement as required by the Goldfields Land and Sea Council (GLSC) and the Wongatha Native Title Claimant group. The Joint Venture intends to maintain open communication with the relevant groups and looks forward to working with the wider Indigenous community over the life of Project with the aim of enhancing current heritage knowledge and enabling Indigenous engagement and participation in the Project.

Regulators and the community raised questions regarding the management of groundwater and draw-down over the life of the Project, and after closure. Data presented in the PER has demonstrated that negative impacts on terrestrial ecosystems and impacts to surface water sources (e.g. gnammas) are not anticipated. This has been further discussed in this document.

As the Project progresses, further data collection and planning will occur for the eventual closure of the Project. As discussed in the PER, the Joint Venture plans to adopt a first principles approach to closure planning to develop a site specific and environmentally appropriate post-mining landscape.

Offsets

Since the release of the PER, the Joint Venture has progressed offset discussions with the DEC, DEWHA and other relevant agencies. The Great Victoria Desert Trust (the Trust) forms the centrepiece of the proposed offsets strategy for the Biodiversity and Greenhouse Offsets. The Joint Venture proposes that the Trust will be used to:

- facilitate biological research to improve the knowledge of the distribution, abundance, biology and ecology of conservation interest taxa directly affected by the Project; and,
- provide resources to facilitate energy efficiency initiatives and the development of renewable energy sources that will benefit the regional community and/ or the wider industry.

It is proposed that the Trust funding is structured to reflect the environmental performance of the Project, with the governance structure of the Trust facilitating stakeholder input and transparency. The offset strategy is further discussed in section 2.5 and Appendix 5.

Future Direction

Following the completion of the Project Assessment process through the EPA, the EPA's report will be provided to the State Minister of the Environment who will make a determination on the environmental acceptability of the Project (Ministerial Statement). It is anticipated the DEWHA will commence their assessment under the EPBC Act following the release of the EPA Report. The Joint Venture envisages the Federal assessment process and the subsidiary approvals (e.g. Part V *EP Act 1986* and *Mining Act 1978*) will commence in the middle to later part of 2010. Assuming that all necessary approvals are granted within the expected time frame, construction of the Project will commence in late 2010 or early 2011.

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1. INTRODUCTION

1.1. PROPONENT

This document is a Response to Submissions that has been compiled in reply to comments received during the formal public consultation period for the State and Federal environmental approvals process for the Tropicana Gold Project (the Project). The formal public consultation period occurred between 28 September and 24 November 2009. The proponent of the Project is the Tropicana Joint Venture (the Joint Venture). The Joint Venture is between AngloGold Ashanti Australia Limited (AngloGold; 70% stakeholder and manager) and Independence Group NL (IG; 30% stakeholder). The Joint Venture commenced in 2002 with exploration commencing soon after.

AngloGold is the manager of the Tropicana Joint Venture and is acting as agent severally for each of the Joint Venturers in their respective percentage interests from time to time. The obligations and liabilities of the Joint Venturers are several only, in accordance with their respective percentage interests.

1.2. PROPOSAL

Exploration by the Joint Venture has revealed a significant resource at the Tropicana and Havana deposits (and adjacent satellite deposits). The Project is a proposed open-cut gold mine with supporting infrastructure as described in the Project's Public Environmental Review (PER) document (Tropicana Joint Venture 2009). The proposed operation is located approximately 330 km east northeast of Kalgoorlie and 200 km east of Laverton (Figure 1.1). The PER describes a project of up to 7 Mt per annum open cut mine with an operating life of up to 15 years.

The Project includes the following areas of infrastructure as described in greater detail in the PER and shown in Figure 1.1:

- Operational Area – The granted Mining Leases surrounding the proposed gold mine including the pit(s), waste landforms, stockpiles, tailings storage facility, processing plant, water storage dams, power station, internal roads, administration block(s), aerodrome, village and other supporting infrastructure. The Mining Leases cover a much greater area than that required to install and operate the mining infrastructure (Figure 1.2);
- Infrastructure Corridor(s) – Access road and communications corridor to link the Operational Area to existing communication and road networks in the Goldfields Region; and,
- Water Supply Area – the Minigwal Trough has been confirmed as an appropriate source of water for the Project.

The majority of the Project's infrastructure is located in the Shire of Menzies (Figure 1.3).

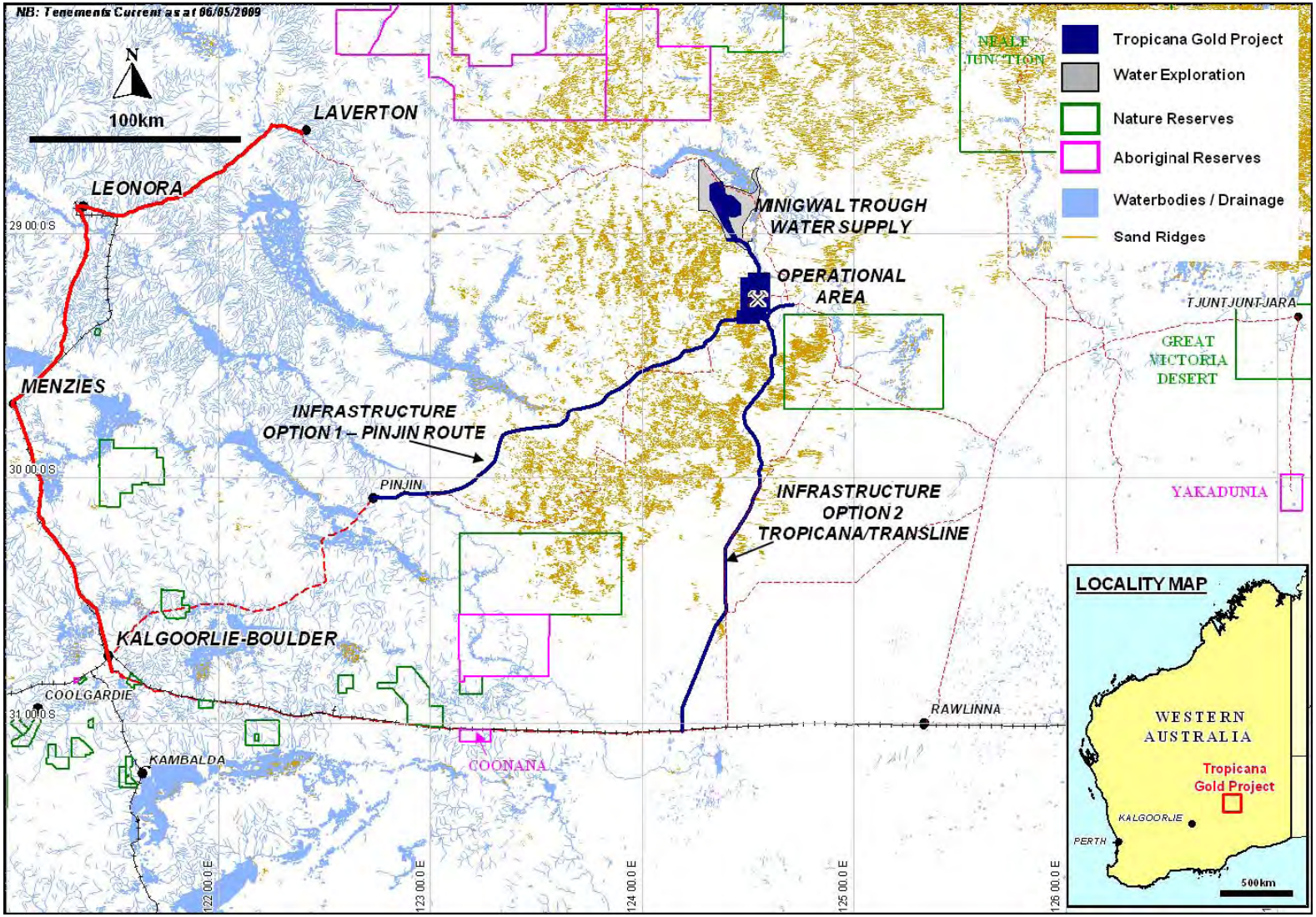
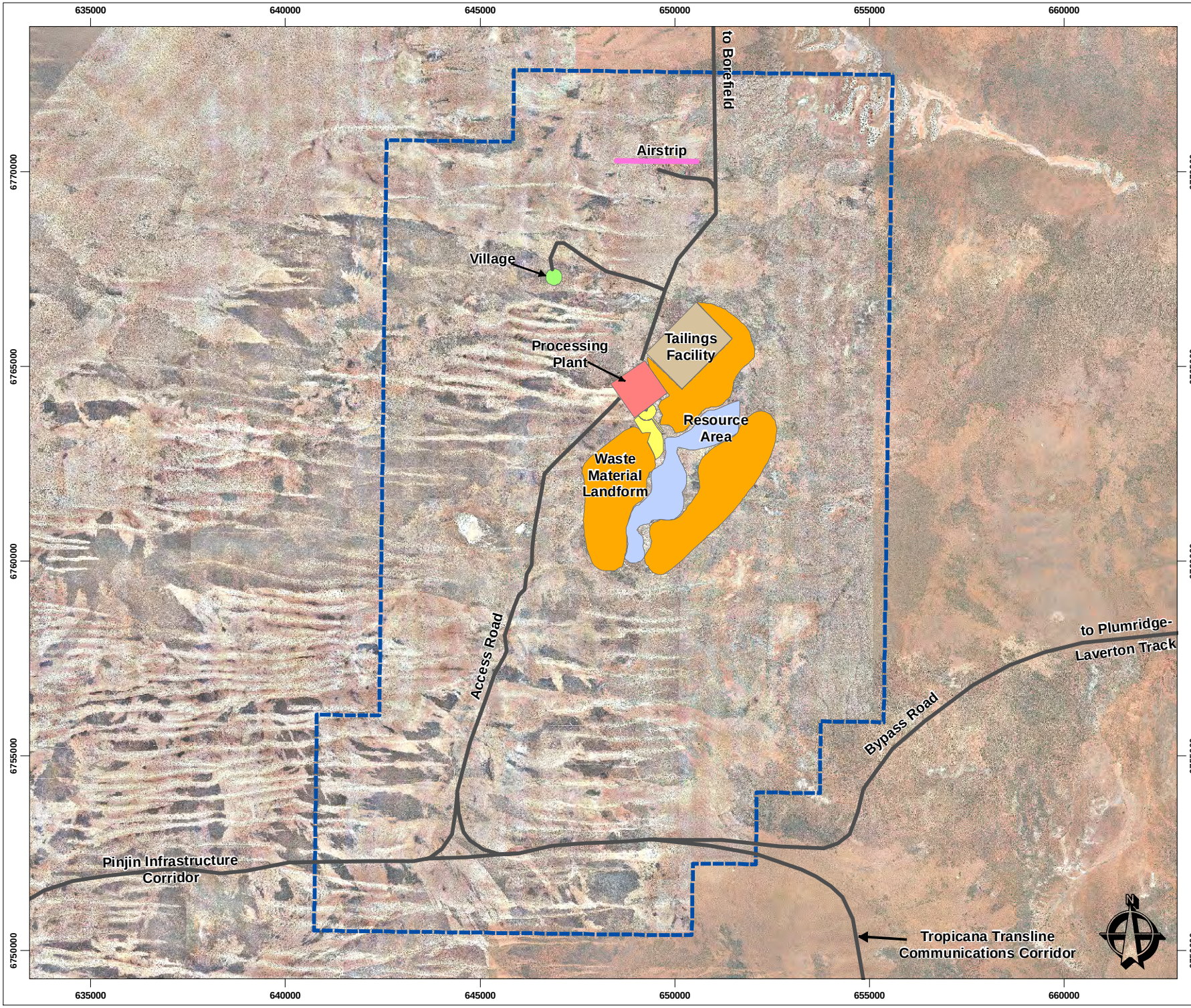


Figure 1.1: Location of Infrastructure Areas for the Tropicana Gold Project



Legend

- Proposed Infrastructure Corridor
- Operational Area

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2008
- LOCALITY MAP SOURCED FROM LANDGATE 2006

SCALE

0 500 1,000 2,000 3,000 4,000 5,000

Metres

1:130,000 @ A4

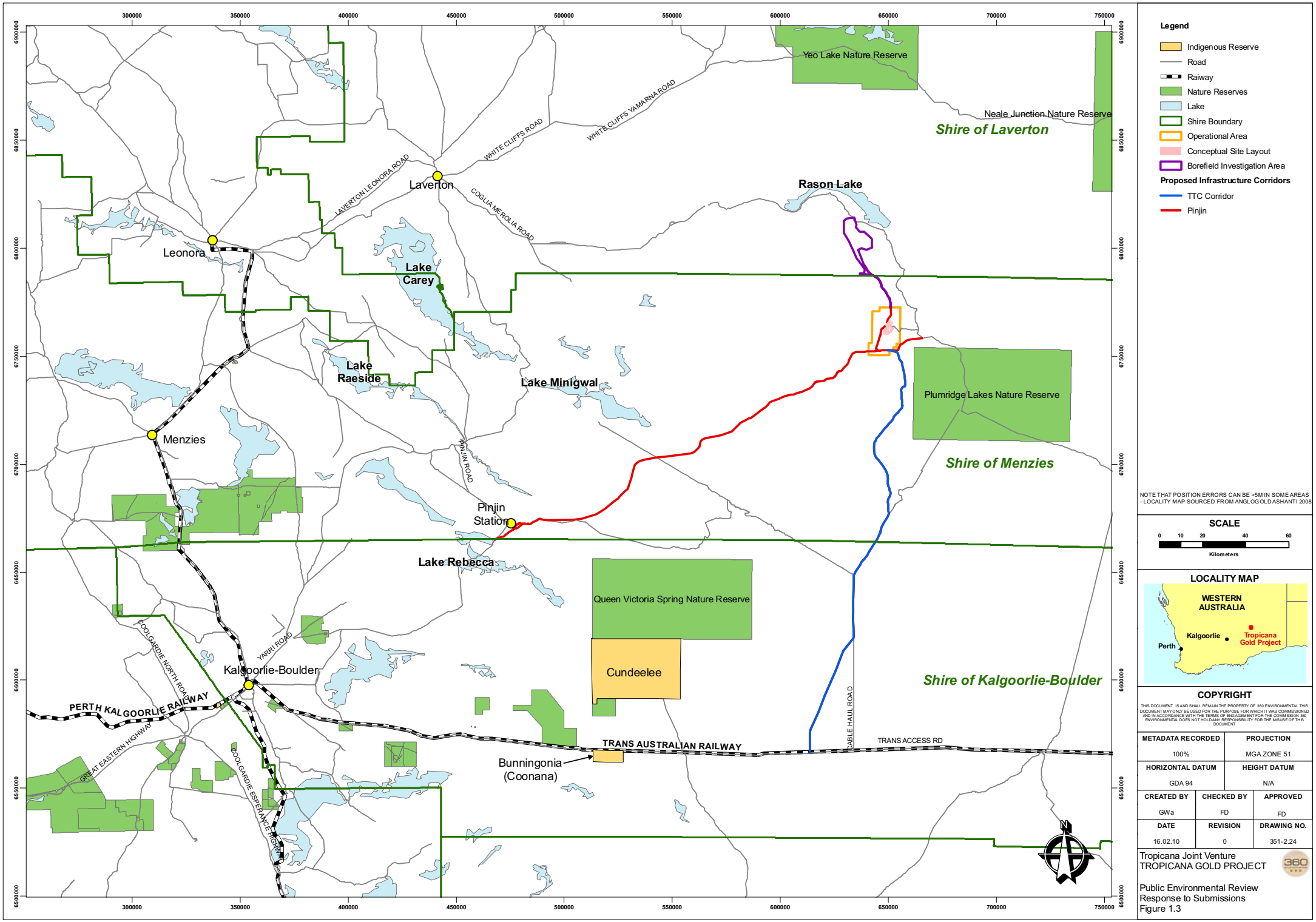
LOCALITY MAP

METADATA RECORDED	PROJECTION
100%	MGA ZONE 50
HORIZONTAL DATUM	**HEIGHT DATUM**
GDA 94	N/A

CREATED BY	CHECKED BY	APPROVED
GWa	BP	FD
DATE	**REVISION**	**DRAWING ID**
18.02.10	0	351-1.25

Tropicana Joint Venture
TROPICANA GOLD PROJECT

Response to Submissions
Conceptual Site Layout
Figure 1.2



Legend

- Indigenous Reserve
- Road
- Raiway
- Nature Reserves
- Lake
- Shire Boundary
- Operational Area
- Conceptual Site Layout
- Borefield Investigation Area

Proposed Infrastructure Corridors

- TTC Corridor
- Pinjin

NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS - LOCALITY MAP SOURCED FROM ANGLOGOLDASHANTI 2008

SCALE

0 10 20 40 60

Kilometers

LOCALITY MAP

METADATA RECORDED	PROJECTION
100%	MGA ZONE 51
HORIZONTAL DATUM	**HEIGHT DATUM**
GDA 94	N/A

CREATED BY	CHECKED BY	APPROVED
GWa	FD	FD
DATE	**REVISION**	**DRAWING NO.**
16.02.10	0	351-2.24

Tropicana Joint Venture
TROPICANA GOLD PROJECT

Public Environmental Review
Response to Submissions
Figure 1.3

1.3. ASSESSMENT PROCESS

1.3.1. Environmental Impact Assessment under Part IV of the Environmental Protection Act 1986

The Joint Venture referred the Project to Western Australia's Environmental Protection Authority (EPA) on 30 May 2008. The EPA determined that a formal environmental impact assessment should be carried out via a PER level of assessment with an eight week public comment period. No appeals were received on the level of assessment. An Environmental Scoping Document (ESD) was prepared according to Section 6.1 of the EPA's *Environmental Assessment (Part IV Division 1) Administrative Procedures 2002* (the EPA's Procedures) and was approved by the EPA on 18 March 2009. Documentation for the PER was prepared according to Section 6.3 of the EPA's Procedures. The PER was approved for public release by the EPA on 16 September 2009.

1.3.2. Commonwealth Assessment Process

The Project was referred to the Federal Department of the Environment Water Heritage and the Arts (DEWHA) on 9 June 2008. DEWHA confirmed that the Project does constitute a 'controlled action' and that Federal assessment of the Project will occur via the Bilateral Agreement between Western Australia and the Federal Government (Figure 1.4). Under the Bilateral Agreement the assessment of the Project by the Federal Government at the level of PER was delegated to the Western Australian EPA. This process requires that the State provide the Federal Environment Minister with an assessment report on the Project. The Federal Environment Minister remains responsible for approving the project under the *Environment Protection and Biodiversity Protection Act 1999* (EPBC Act) following consideration of the EPA's report.

1.3.3. Public Consultation Period

The formal public consultation period for the Project commenced on Monday 28 September 2009 (Queen's Birthday public holiday) for a period of eight weeks and one day (to account for the public holiday). The formal public consultation period ended on Tuesday 24 November 2009. Eleven formal submissions were received by the EPA for the Project. Two additional submissions were received outside of the formal process – one submission was sent direct to the Joint Venture and one was sent to the EPA, outside of the formal period. This document contains the Joint Venture's response to all 13 submissions (summarised in Section 3.1, discussed in full in Section 4).

The Joint Venture also undertook facilitated public consultation during the eight week period in Perth, Kalgoorlie and Menzies. The discussion points from these sessions are also included in this document (Section 3.2).

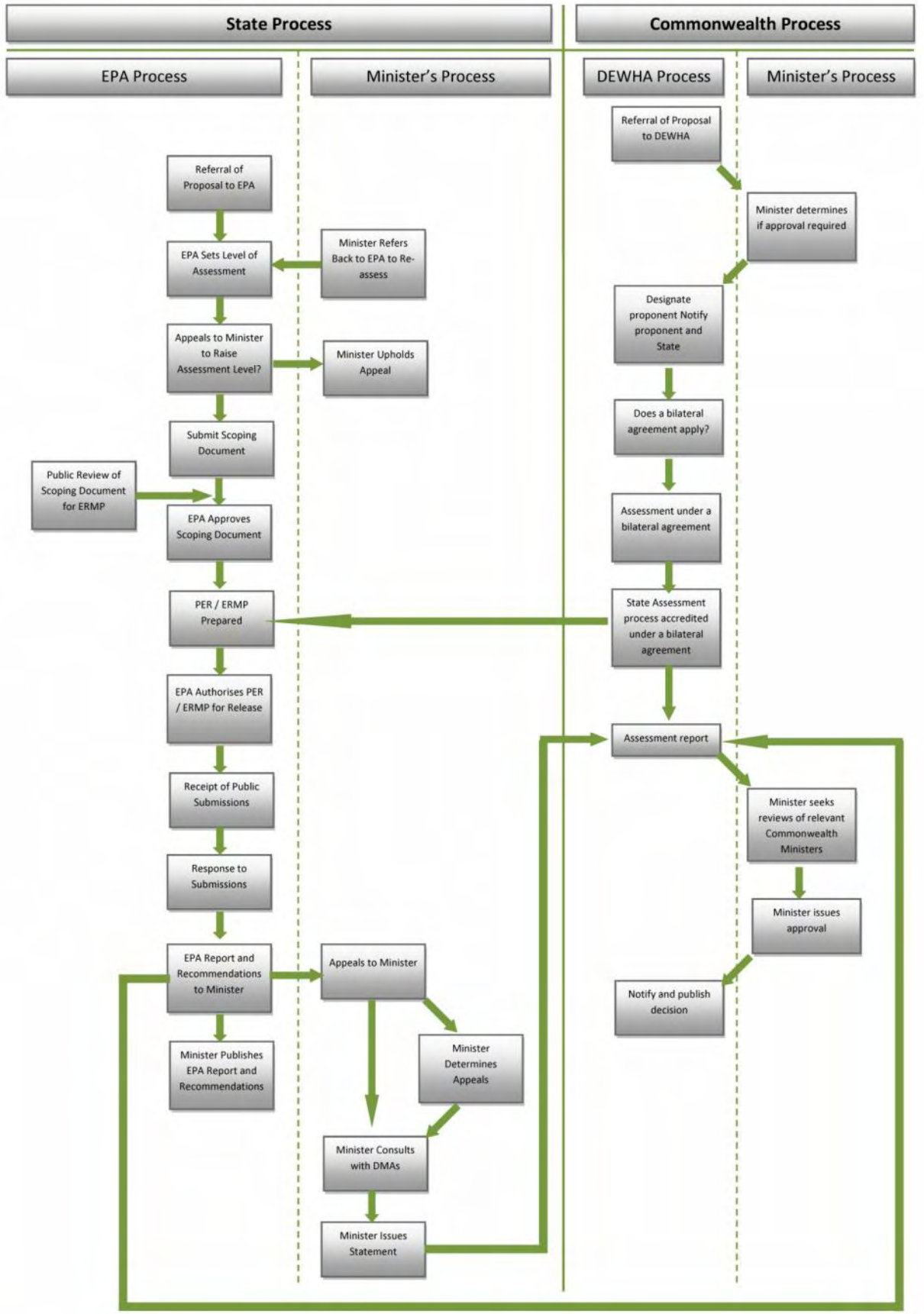


Figure 1.4: Assessment Flow Diagram

1.4. PURPOSE OF DOCUMENT

In accordance with Section 9.2 of the EPA's Procedures, the purpose of this document is to provide a summary of key environmental issues raised in the public and government agency submissions made on the PER and to provide written responses to these issues. Submissions received during the formal process have been grouped according to the environmental aspect or value to which it relates i.e. physical factors such as soil and landforms, surface water and groundwater. Discussions from the facilitated public meetings have been grouped by theme (e.g. pit void, energy source, employment opportunities).

This document also contains results of supplementary surveys undertaken by the Proponent following the compilation of the PER in September 2009.

1.5. STRUCTURE OF DOCUMENT

- Section 1: Introduction: Re-introduces the proponent, briefly describes the Project, outlines the environmental assessment process and provides the purpose and structure of the document.
- Section 2: Project progress: Provides a progress update of the Project.
- Section 3: Submissions received including a summary of submissions: outlines the submissions received on the PER during the public submissions period, and informal comments and feedback received during the public submissions period.
- Section 4: Response to submissions: provides the Joint Venture's response to submissions received during the public submissions period.
- Section 5: Supplementary work completed to date: Outlines additional work undertaken by the Joint Venture since the submission of the PER.
- Section 6: Clarifications from the public environmental review documentation
- Section 7: Summary.
- Section 8: References.
- Appendix 1: Copies of public advertisements regarding the formal public comment period and the facilitated public meetings.
- Appendix 2: Transcript of Submission Responded to by the Joint Venture.
- Appendix 3 (Series): Copies of all relevant environmental reports on additional surveys and assessments finalised since the publication of the PER.
    - Appendix 3A: Priority Flora assessment by the Department of Environment and Conservation.
    - Appendix 3B: Conservation Significant Flora Species Supplementary Memorandum (MBS Environmental, January 2010).
    - Appendix 3C: Spring Field Survey Pinjin Infrastructure Corridor (November 2009) (Mattiske Consulting, January 2010).
    - Appendix 3D: Genetic analysis of *Eucalyptus articulata* samples (Myrtaceae). II (Botanic Gardens and Parks Authority, November 2009).
    - Appendix 3E: Assessment of habitat availability for the Sandhill Dunnart (Churchill, December 2009).
    - Appendix 3F: Sandhill Dunnart Spring Field Survey Pinjin Corridor and Adjacent Areas (GHD Pty Ltd et al, February 2010).

  - Appendix 3G: Tropicana Gold Project – Sandhill Dunnart Assessment: Additional Information for the Department of Environment and Conservation (Gaikhorst, January 2010).
  - Appendix 3H: Draft manuscript "Sandhill dunnarts (*Sminthopsis psammophila*) show little differentiation between populations from South Australia and Western Australia" (Spencer et al in press).
  - Appendix 3I: Professional opinion on the affects on Tropicana Gold Project on marsupial moles conservation in regard to fragmentation of the marsupial moles population (Benshemesh, November 2009).
  - Appendix 3J: Additional information on Mygalomorph Spiders & DNA Study (*ecologia* Environment, December 2010).
  - Appendix 3K: Biodiversity of the two-pronged bristletail (Diplura) in Western Australia (Koch, December 2009)
  - Appendix 3L: Supplementary Troglofauna Report (*ecologia* Environment and L Lawrence, February 2010);
- Appendix 4: Environmental Monitoring Strategy.
- Appendix 5: Biodiversity and Greenhouse Offset Strategy.

2. PROJECT PROGRESS AND STAKEHOLDER CONSULTATION

There have been no alterations to the Project's proposed maximum extent, mining or processing methodologies or operating life since the publication of the PER.

2.1. FEASIBILITY STUDY

The Joint Venture is currently undertaking a Feasibility Study for the project to optimise aspects of the engineering, design and implementation strategy. It is anticipated the study will be completed in the second half of 2010. Construction is anticipated to commence in late 2010 or early 2011 with the timing contingent on all required approvals being obtained.

2.2. CONSULTATION WITH REGULATORS

The Joint Venture continued its engagement with Department of Environment and Conservation (DEC) and DEWHA during the public consultation period. These discussions focused on:

- the adequacy of baseline surveys;
- the proposed management measures and monitoring strategies; and,
- the Project's Offset Strategy (see Section 2.5 below).

The aim of these discussions was to progress issues raised by the DEC prior to the formal public consultation period relating primarily to Sandhill Dunnarts, Troglofauna, Marsupial Moles, and flora of conservation interest. The Joint Venture updated the DEC on progress that had been made towards better understanding the distribution and availability of habitat for Troglofauna and the Joint Venture's plans for further work on Troglofauna, listed terrestrial fauna and flora. The results of the supplementary work are summarised in this document and are included in Appendix 3. Following the meetings with the DEC, the Joint Venture identified the need to develop an Environmental Monitoring Strategy for the Project to capture all monitoring requirements documented in the PER, the Project's proposed Environmental Management Strategies (as provided in Appendix Series 3 of the PER) and requests for monitoring programs stemming from the formal submissions. The Environmental Monitoring Strategy can be found in Appendix 4 of this document.

2.3. AGENCY SITE VISIT

Representatives from the Office of the EPA, Department of Environment and Conservation, Department of Mines and Petroleum and the Department of Indigenous Affairs visited the Project Operational Area on 18 November 2009 (Plate 2.1). While onsite the Government Officers inspected the eastern end of the Pinjin Infrastructure Corridor (the proposed Mine Access Road), the proposed resource area, plant area, western waste landform, tailings storage area, village site and the Western Dunefield (Figure 2.1).

Plate 2.1: Agency visit, 18 November 2009

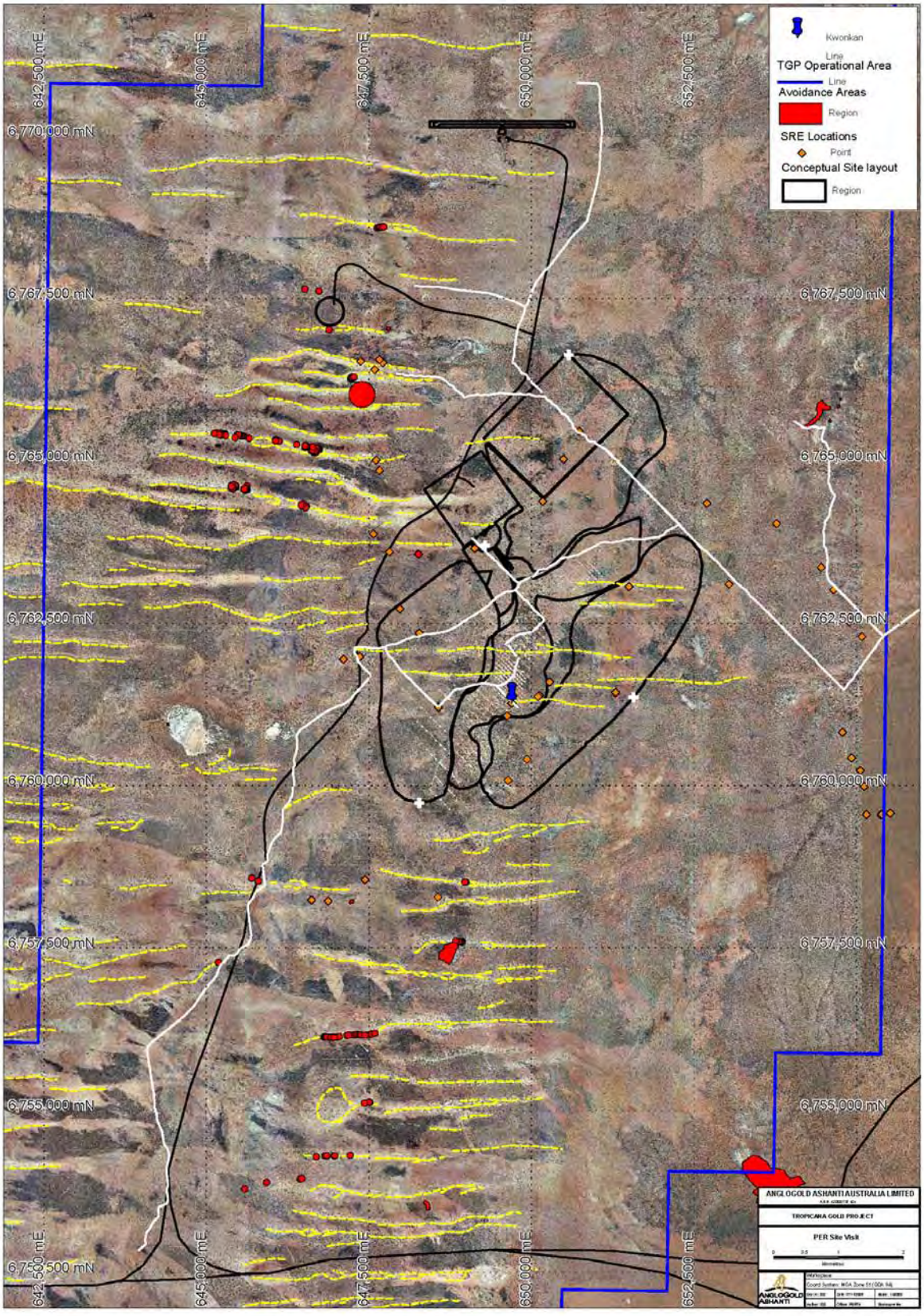


Figure 2.1: Areas visited by Regulators in November 2009 (white line is route taken)

2.4. PUBLIC INFORMATION SESSIONS

The Joint Venture held three public information sessions in Perth, Kalgoorlie and Menzies on 2 - 5 November 2009 (Plate 2.1). These sessions where advertised in The West Australian, Kalgoorlie Miner and Menzies Matters and were open to all interested community members. A total of 80 people attended. Questions raised during these meetings included:

- potential impacts to terrestrial ecosystems;
- potential usage restrictions on the Mine Access Road by non-Joint Venture parties;
- heritage protection;
- potential dewatering impacts on gnamma holes and the surrounding environment; and,
- rehabilitation and closure.

Plate 2.1: Public information sessions

2.5. OFFSETS

The Joint Venture has undertaken further offset discussion with the DEC, DEWHA, Department of State Development and the Department of Mines and Petroleum. The aim of these discussions was to progress the structure and content of the proposed Biodiversity and Greenhouse Offsets put forward in the PER. The aim of these discussions and the overall package is to ensure that the outcomes meet the requirements and intent of the various position papers and guidelines on offsets, while also meeting community expectations.

In developing the Project, the Joint Venture aims to deliver an environmentally responsible project with a minimum standard of 'no net environmental loss' or alternatively with 'net conservation benefit' (EPA 2006). The State and Federal governments recommend that an offset package is only used as a last resort following implementation of

the typical hierarchy of control; avoid, minimise, rectify and reduce, along with proactive environmental management practices (Figure 2.2).

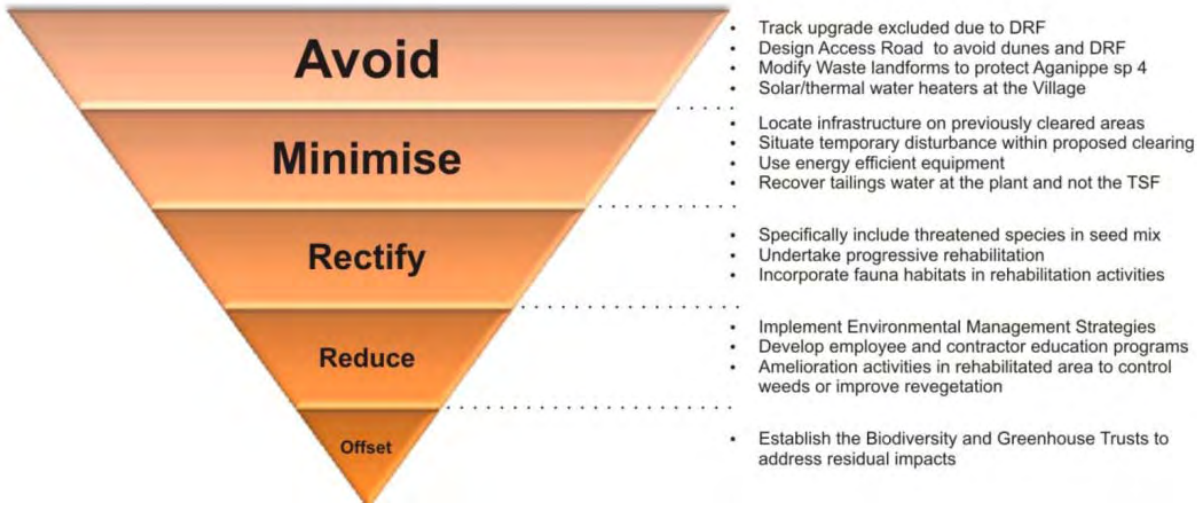


Figure 2.2: Examples of how the Hierarchy of Control has been utilised for the Project

In line with State and Federal guidance documents, the Joint Venture is only considering environmental offsets to manage impacts for which leading practice management options are insufficient to avoid and mitigate impacts (EPA 2006, Australian Government 2007).

The Great Victoria Desert Trust (the Trust) forms the centrepiece of the offsets strategy for the Biodiversity and Greenhouse Offsets. The Joint Venture proposes that the Trust will be used to:

- facilitate biological research to improve the knowledge of the distribution, abundance, biology and ecology of conservation interest taxa directly affected by the Project; and,
- provide resources to facilitate energy efficiency initiatives and the development of renewable energy sources that will benefit the regional community and/ or the wider industry.

An offset strategy document has been developed by the Joint Venture and is attached in Appendix 5. The following sections provide a summary.

2.5.1. Biodiversity Offset

As described in the PER, the Joint Venture has sought to minimise the environmental impacts of the Project through avoidance and minimisation wherever practical. For example the Project's layout has been designed to avoid all currently identified locations of Declared Rare Flora and to minimise impacts to flora, fauna and fauna habitat and ecological communities of conservation interest. Despite these efforts, some residual impacts to significant biological values remain. Therefore, the Joint Venture is seeking to offset these impacts with a "like for like or better" offset within the Great Victoria Desert (GVD), the bioregion most relevant to the residual impacts.

The residual impacts for which the Biodiversity Offset is proposed alleviate include:

- clearing impacts on conservation significant species (recognised at the State and/ or Federal level);
- indirect impacts from increased access to the region; and,
- alterations to biodiversity and ecological functionality.

It is envisaged that the Trust would facilitate research, environmental education and on-ground conservation work that will benefit the wider GVD during and after the life of the Project. The Trust will seek to collaborate with and/ or support other initiatives in the area, for example, supporting regional DEC staff or other appropriate organisations in undertaking further surveys to complement and extend the results generated by the Joint Venture to date. Research would be focused on the Project Biodiversity area as shown in Figure 2.3. It is planned that the knowledge gained through the Trust would be released to the public and be available for use by the State and other stakeholders in the region. See Appendix 5 for further information of the potential objectives of the biodiversity component of the Trust.

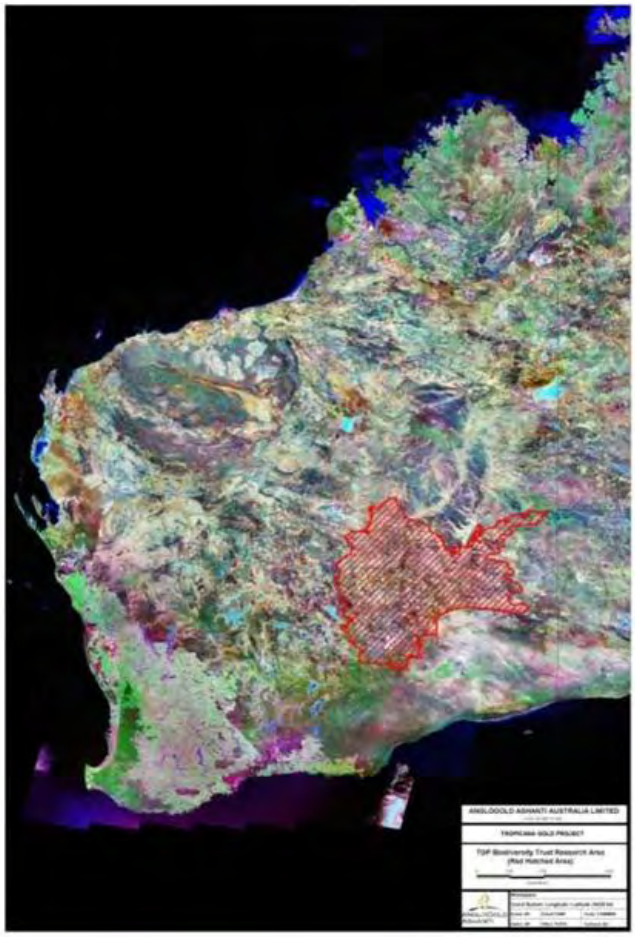


Figure 2.3: Project Biodiversity Trust Research Area (Red Hatched Area)

2.5.2. Greenhouse Offset

The Joint Venture aims to meet the overall objective of EPA Guidance Statement 12 (EPA 2002) (and documents referenced therein) to reduce greenhouse gas (GHG) emissions to as low as practicable. In designing the Project, the Joint Venture has optimised the efficient use of power and fuel to minimise emissions. This has included the design of the Project layout, selection of equipment (e.g. high pressure grinding rolls rather than standard grinding technology) and optimising the process itself to make sure that power/ fuel savings in one area are not counterbalanced by an excessive cost in another area.

The Joint Venture aims to achieve the EPA's objective "to ensure that emissions do not adversely affect environment values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards". To address the residual GHG emissions that cannot be avoided, reduced or mitigated,

the Joint Venture proposes to establish a GHG offset that will be funded through the Trust. The Joint Venture proposed to use the Trust to fund the development of new technologies to minimise GHG emissions. The Joint Venture's proposed contributing offset would be used in a research and development program to identify ways to reduce GHG emissions beyond the scope of the Project. The Joint Venture envisages that the overall aim of research and development is to stimulate and accelerate innovations that will reduce emissions and has the potential to lead to dramatic reductions in the emissions intensity of the mining sector as a whole, and perhaps have application beyond the mining sector.

3. SUBMISSIONS RECEIVED

3.1. SUBMISSIONS RECEIVED BY THE EPA

Eleven submission documents were received by the EPA and forwarded to the Joint Venture. The Joint Venture has divided each submission into individual items that are formally addressed in this document. Some submissions (e.g. C and H) clearly stated the points that were to be formally addressed as "Recommendations", often with supporting discussion or reasoning. The remainder of the submissions varied in form from prose to sub-titled documents. The Joint Venture has divided the prose and sub-titled submissions into separate items (see Appendix 2 for a breakdown of each submission into its component items). Once divided, the 11 submission documents were comprised of a total of 80 individual items that the Joint Venture has responded to in Section 4 of this document. In order of the date sent, submitters were:

- Submission A: Shire of Laverton (SoL; three comments);
- Submission B: Department of Water (DoW; one comment);
- Submission C: Central Desert Native Title Services (CDNTS; twenty five comments);
- Submission D: Department of Health (DoH; eight comments);
- Submission E: Department of Indigenous Affairs (DIA; four comments);
- Submission F: DEC Goldfields Industry Regulation group (nine comments);
- Submission G: Department of Mines and Petroleum (DMP; two comments);
- Submission H: Department of Environment and Conservation – Environment Management Branch (EMB; fourteen comments);
- Submission I: Wildflower Society (four comments);
- Submission J: Department of Environment and Conservation - Terrestrial Ecosystems Branch (now Office of EPA [OEPA]; three comments); and,
- Submission K: Anonymous (seven comments).

Appendix 2 provides a transcript of the items in each submission that the Joint Venture has responded to and indicates the coding nomenclature used by the Joint Venture in the remainder of this document.

The majority of comments received can be categorised as follows:

- potential impacts to terrestrial ecosystems;
- Indigenous issues; and,
- comments and advice on subsidiary approvals (e.g. Part V Works Approval and Mining Proposal).

Table 3.1 provides a brief description of the specific comments/ recommendations received and divides them into aspects based on Table 7.2 of the PER. Appendix 1 provides similar information, breaking down comments based on the submission, rather than the aspect of the Project.

Table 3.1 Summary of Submissions Received by the EPA During the Public Comment Period (28 September – 24 November 2009)

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Project Design and Management				
Stakeholder Engagement	A.1 A.3 B.1 E.1 G.1 J.1 J.2	The following groups are satisfied that the management actions and commitments described in the PER are adequate for the management of environmental and social factors associated with the Project: • Shire of Laverton • Department of Water (DoW) • Department of Indigenous Affairs (DIA) • Department of Mines and Petroleum (DMP) • Office of the EPA (OEPA; formally DEC – Terrestrial Ecosystems Branch).	The Joint Venture is pleased to have been able to adequately address the potential concerns of the Shire of Laverton, DoW, DIA, DMP and OEPA in the PER documentation.	See Section 4.1 "Stakeholder Engagement".
	D.3.1	The Environmental Health Directorate of the Department of Health (DoH) recommends that the Joint Venture consult with DoH representatives in Kalgoorlie-Boulder to ensure that health service requirements (e.g. GPs) and requirements under the *Health Act 1911* are appropriately considered.	The Joint Venture will have medical staff on site for all stages of the Project; increased demand on regional health and emergency services is not anticipated. The Joint Venture will continue to liaise with the DoH in Kalgoorlie regarding the provision of regional health services.	See Section 4.1 "Stakeholder Engagement".
	K.1	The anonymous authors of Submission K have concern regarding the long-term impact and management of the Project, in particular the open pit.	The Joint Venture has endeavoured to design a project that will have limited impact on the local environment. By adopting the EPAs hierarchy of control (Figure 2.2), the proposed management measures detailed in the PER and implementing its proposed monitoring strategies, the Joint Venture anticipates perceived and actual impacts can be managed in an environmentally and socially acceptable manner.	See Section 4.1 "Stakeholder Engagement".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	C.1 C.2 C.22 C.23	CDNTS requested that the Joint Venture acknowledge and consult with the Traditional Owners with respect to all aspects raised in their submission, including environment.	Following the dismissal of the Wongatha Claim in 2007, there has been no replacement Native Title Claim registered over the Project area. As a result, this has required an increased effort in consultations to ensure every opportunity is available for Indigenous stakeholder to have input into the Project's planning and design. The Joint Venture recognises that the Native Title claim status may change over the life of the Project, and has endeavoured to be inclusive rather than exclusive in its consultations with Indigenous Stakeholders.	See Section 4.1 "Stakeholder Engagement".
Design	F.5.1a	The DEC's Industry Regulation Group queried whether holding and/ or evaporation ponds will be required for excess pit de-water.	The Joint Venture will install water storage facilities that will be either lined ponds/dams or storage tanks to temporarily hold excess water.	Section 4.1 "Design"
	H.3.1	EMB provided comment on the development of the Mine Access Road and Communications Corridor, preferring that both items of infrastructure be developed in the same corridor.	Only one access road (the Pinjin option) is proposed for the Project. The development of separate road and communications links is preferable at this point in time because there is no existing communication service in the vicinity of the Pinjin Corridor.	Section 4.1 "Design"
	H.3.2	EMB recommended the final locations of items of infrastructure be defined and the Joint Venture provides commitments to avoid conservation significant species and communities. If these cannot be met, EMB recommends maximum levels of impacts are set as a condition of approval.	The PER identifies the location/ alignment of the Mine Access Road and village, and provides environmental commitments with regard to the location of other items of infrastructure that have not yet been finalised.	Section 4.1 "Design"
	D.1.3 F.3.1 F.4.1	DoH and DEC's Industry Regulation Group have provided comment on the management of sewage/ waste water treatment system and the Project's landfill facility.	The Joint Venture's response to Comments D.1.3, F.3.1 and F.4.1 are summarised below, under "Subsidiary Approvals and Compliance".	See Section 4.1 "Subsidiary Approvals and Compliance"

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	A.2 F.1.1	The Shire of Laverton and the DEC's Industry Regulation Group have provided comment on the management of tailings.	The Joint Venture's response to Comments A.2 and F.1.1 are summarised below, under "Terrestrial Fauna"	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	F.5.2	DEC's Industry Regulation Group requested information regarding surface drainage for the Project (excluding the roads) and questioned if there was potential for water starvation.	The Joint Venture's response to Comment F.5.2 is summarised below, under "Surface Water".	See Section 4.3 "Surface Water".
Management/ Monitoring Strategies	C.15	CDNTS recommended that any assessment of the environment and other risks must involve substantial input from the Traditional Owners.	37% of all consultations undertaken have either been directly with or including Indigenous community members. Stakeholders have been provided with opportunity to raise concerns regarding Project options prior to and during the formal consultation process, the outcomes of which contributed to the environmental risk assessment process. The risk assessment will be periodically reviewed and updated; the Indigenous Reference Group which is being established for the Project will be regularly consulted to ensure that the future assessments also consider community concerns.	See Section 4.1 "Management/ Monitoring Strategies".
	H.1.1	EMB would like to see the Joint Venture's management strategies for biodiversity management be made conditions of the Project's approval.	The Joint Venture agrees with the EPAs position on outcome-based conditions (such as pre-defined impact limits) rather than the more traditional, prescriptive management technique-based conditions. The conditions imposed on the Project should provide the Joint Venture with the flexibility to adopt and adapt new techniques and strategies that achieve the best environmental outcome.	See Section 4.1 "Management/ Monitoring Strategies".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	C.19 C.21	CDNTS consider cross-cultural understanding and acceptance is necessary to maintain long-term relationships between the Joint Venture and Traditional Owners, and all Joint Venture staff undergo compulsory cultural awareness training.	The Joint Venture agrees that it is critical to develop and maintain an open and respectful relationship with all stakeholders, including Indigenous stakeholders. All staff and contractors will be required to undertake cultural awareness sessions.	See Section 4.1 "Management/ Monitoring Strategies".
	H.2.1	EMB requested that areas subject to indirect impacts are delineated and monitored for impacts with pre-determined trigger levels to initiate management actions, and that this is subject to a condition of the approval.	The Joint Venture has developed an Environmental Monitoring Strategy (Appendix 5) that includes the provision of a monitoring protocol to assess indirect impacts on flora and vegetation. The Joint Venture has developed triggers to determine if management measures are adequate.	See Section 4.1 "Management/ Monitoring Strategies".
	H.4.4a	EMB provided comment on the monitoring and management of Short Range Endemic (SRE) invertebrates and recommended the Joint Venture develop a SRE monitoring program.	The Joint Venture's response to Comment H.4.4a is summarised below, under "Fauna".	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	I.1	The Wildflower Society drew attention to the need for infrastructure corridors to be well managed, particularly with respect to clearing, fire management, feral plants and animals and rubbish management.	The Joint Venture have developed specific management strategies (released with the PER) that incorporate management actions specifically for the Mine Access Road.	See Section 4.1 "Management/ Monitoring Strategies".
	K.6	Anonymous submission K expressed concerns regarding the long term management of the Project.	The Joint Venture has developed an Integrated Management System (IMS) and associated management strategies to ensure its activities are managed responsibly over the life of the Project. To ensure proactive and adaptive environmental management, the Conceptual Closure and Rehabilitation Strategy will be updated over the life of the Project. The Joint Venture will progressively rehabilitate to ensure that the rehabilitation outcomes are managed in accordance with agreed closure strategies.	See Section 4.1 "Management/ Monitoring Strategies".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Subsidiary Approvals and Compliance i.e. Works Approval	D.1.1	DoH provided guidelines to ensure that adequate treatment and control steps are in place for the RO plant to ensure adequate drinking water quality on site.	This aspect is beyond the scope of the EIA process; however the Joint Venture will use these guidelines for the basis of drinking water management.	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".
	D.1.2	DoH recommended the Joint Venture utilise the *Alternate Water Supply Guidelines – Stormwater and Rainwater* for dust suppression purposes.	This aspect is beyond the scope of the EIA process, the Joint Venture considers the most relevant guidelines appears to be the *DRAFT Guidelines for the Use of Recycled Water in Western Australia* (April 2009).	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".
	D.1.3 F.3.1	The DEC's Industry Regulation Group and DoH provided comments and considerations on the design of the sewage treatment plant allowing provision for mosquito management, capacity and sludge disposal.	The Joint Venture will ensure that the Project IMS adequately considers the risk and management associated with mosquitos and vermin.	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".
	D.2.2	DoH requested evidence that all necessary Local Government approvals have or will be obtained for the accommodation village.	All applicable approvals from the Local Government (Shire of Menzies) will be obtained as required.	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".
	F.4.1	The DEC's Industry Regulation Group requested information regarding the location, type and capacity of the landfill and the associated management of feral animals.	The landfill is yet to be designed, it will require a Works Approval and Licence from the DEC and will be located, designed and constructed in accordance with the *Environmental Protection (Rural Landfill) Regulations 2002* and any condition associated with the Works Approval and/or Licence. The Environmental Monitoring Strategy (Appendix 5) and OEMS (PER Appendix series 3C) provide strategies to prevent associated environmental impacts.	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".
	F.5.1b	The DEC's Industry Regulation Group requested information regarding pipeline monitoring at works approval and licensing stage.	Pipeline monitoring will comprise a combination of visual inspections and real-time leak detection systems. The Environmental Monitoring Strategy (Appendix 5) details monitoring requirements for infrastructure, further information will be provided at the works approval stage.	See Section 4.1 "Subsidiary Approvals and Compliance i.e. works approval".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	D.2.1 D.2.3	DoH provided recommendations for dust management and monitoring and requested clarification regarding Fibrous materials.	Comments D.2.1 and D.2.3 are addressed below in "Public/ Personnel Health".	See Section 4.2 "Public/ Personnel Safety and Health".
	F.2.1	The DEC's Industry Regulation Group commented on gaseous emission from the power station.	Comment F.2.1 is addressed in "Air Quality" below.	See Section 4.5 "Air Quality"
	F.6.1	The DEC's Industry Regulation Group requested further information regarding chemical storage on site.	Comment F.6.1 is addressed in "Pollution of land and water" below.	Section 4.5 "Pollution of land and water".
	G.2	DMP stated that the Joint Venture will need to submit a Preliminary Closure Plan with the Mining Proposal.	Comment G.2 is addressed in "Rehabilitation and Closure" below.	See Section 4.6 "Rehabilitation and Closure".
	I.3	The Wildlflower Society submitted comment on the rehabilitation, closure and bonding of the Project.	Comment I.3 is addressed in "Rehabilitation and Closure" below.	See Section 4.6 "Rehabilitation and Closure".
Management Commitments/ Offsets	C.8	CDNTS requested the need for best practice environmental outcomes for the area.	The Joint Venture agrees that the adoption of best / leading practice techniques should be undertaken at every reasonable opportunity, the Joint Venture has endeavoured to incorporate lead practice strategies and management measures into the Project to fulfil the EPA requirements.	See Section 4.1 "Management Commitments and Offsets".
	C.10	CDNTS has requested an open and transparent environmental process including consultation with Traditional Owners regarding environmental matters.	The Joint Venture agrees with the philosophy of open and transparent engagement with all stakeholders including Indigenous Communities/stakeholders and NGOs. The Joint Venture has undertaken extensive stakeholder engagement throughout the EIA process and will continue throughout the life of the Project.	See Section 4.1 "Management Commitments and Offsets".
	C.13	CDNTS requested in relation to Indigenous heritage matters the Joint Venture implement the recommendations made under heading 3.2.	Comment C.13 is addressed in section "Indigenous Heritage" below.	See Section 4.2 "Indigenous Heritage".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	H.5.1	EMB requests residual impacts to Priority flora be mitigated or offset and request the Joint Venture provide Priority flora extrapolations for review.	The Joint Venture has adopted the hierarchy approach to environmental management with priority being placed on the avoidance and minimisation of potential impacts to biological values such as flora of conservation interest. The Joint Venture will seek to include relevant Priority species in the revegetation program as part of the mitigation strategy (Additional Priority flora populations have been identified, resulting in the down-grade and de-listing of several Priority species). The aim of the offsets approach is to increase the knowledge of conservation and biodiversity values in the region so that appropriate management measures can be developed and implemented. Discussion of the extrapolation methodology is provided in section 6.3 of this document.	See Section 4.1 "Management Commitments and Offsets".
	H.6.1	EMB raised concerns regarding local impacts to vegetation communities and requests the stated limits of disturbance on vegetation communities S8, ExL.t2H and S4 are not exceeded.	The Joint Venture has used its best endeavours to limit the direct and residual impacts to significant assets by optimising the layout of the Project to minimise lasting impacts by avoiding impacts to sensitive areas such as the Western Dunefield. The Joint Venture considers the inclusion of a condition limiting clearing of the listed vegetation communities is of questionable merit as: • The boundary of the S4 community has been refined, increasing its current known extent, and decreasing the percentage impact. • Community ExL.t2H is not identified as a PEC, is widespread in the region, and is not the principle or only habitat of threatened species in the area. • Community S8 exists on an atypical substrate to the PEC.	See Section 4.1 "Management Commitments and Offsets".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	I.4	The Wildflower Society provided comment on the Joint Venture's proposed offset for impacts to biodiversity that are expected to result from the development of the Project.	The Joint Venture proposes to develop a Trust (or similar financial structure) to offset residual impacts to significant biological assets in the GVD which will be an independent funding body administered by a Review Panel and advised by a technical panel.	See Section 4.1 "Management Commitments and Offsets".
Social Surroundings				
Indigenous Heritage	E.2 E.3 E.4	DIA has not yet received ethnographic and archaeology surveys for the project. DIA recognise that the Joint Venture is committed to conducting further ethnographic work to include consultants that have not yet participated. The DIA believes the project can be managed to protect cultural heritage values if PER commitments are met.	The Joint Venture acknowledges DIAs endorsement and is working with the DIA to provide copies of any outstanding reports. Supplementary ethnographic surveys have been commissioned in consultation with CDNTS.	See Section 4.2 "Indigenous Heritage".
	E.1	The DIA are satisfied that the management actions and commitments described in the PER.	Comment E.1 is addressed in "Stakeholder Engagement" above.	See Section 4.1 "Stakeholder Engagement"
	C.3 C.5 C.6 C.7 C.13	CDNTS stated the primary source of heritage matters is facilitated though the *Native Title Act 1993*. CDNTS requested the Joint Venture rewrite the draft Heritage Management Strategy in consultation with Traditional Owners following the development of a Heritage Management Plan, and maintain on-going consultations with Traditional Owners in regards to heritage matters.	Archaeological surveys over the proposed Project area have been undertaken to the required standard as specified by DIA and EPA guidelines. All ethnographic surveys were undertaken by the Wongatha Heritage Management Team and completed in accordance with the Goldfields Standard Heritage Agreement protocols. It is recognised that Traditional Owners of neighbouring areas may possess heritage knowledge over the Project area and further consultation is underway. In the event that a clearly defined group of Traditional Owners come forward in the future, a specific Heritage Management Plan would be developed in conjunction with the Indigenous Reference Group and Traditional Owners and the PER Heritage Management Strategy would be updated as required.	See Section 4.2 "Indigenous Heritage".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	C.4	CDNTS requested Ethnographic and archaeological heritage surveys be conducted over the Project Area by Traditional Owners who hold appropriate knowledge of laws and customs in the area.	All surveys were undertaken in accordance with the DIA requirements and the Goldfields Standard Heritage Agreement, working with the recognised survey team in the period from 2002 to 2009. In December 2009, a new consultation plan was developed between CDNTS and the Joint Venture resulting in the appointment of an independent Anthropologist to carry out further research and interviews.	See Section 4.2 "Indigenous Heritage".
	C.9	CDNTS requested the Joint Venture incorporate Indigenous cultural context into environmental planning and management around mine.	The Joint Venture agrees that opportunities should be investigated to incorporate where practical, cultural knowledge into the environmental planning and management. Comments and feedback obtained during the consultation process have been considered during Project planning. The Joint Venture plans to continue its consultation with all interested stakeholders and is working to establish an Indigenous Reference Group. The Joint Venture anticipates that the proposed offset package could facilitate opportunities to better understand the zoological, botanical and cultural aspects of the GVD in consultation with Indigenous communities.	See Section 4.2 "Indigenous Heritage".
	K.7	The anonymous Submission K raises concern regarding the potential impacts of drawdown on gnammas.	Comment K.7 is addressed in "Groundwater" below.	See Section 4.3 "Groundwater".
Visual Amenity and Landscape	K.5	The anonymous authors of Submission K state concern over the long-term impact and management of the Project, in particular of the open pit.	Comment K.5 is addressed in "Rehabilitation and Closure" below.	See Section 4.6 "Rehabilitation and Closure".
Recreation and Tourism	H.1.1	EMB raised concerns regarding the potential secondary consequences on biodiversity and ecosystem function resulting from opening up a previously undeveloped landscape.	Comment H.1.1 is addressed above in "Management/ Monitoring Strategies".	See Section 4.1 "Management/ Monitoring Strategies".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Public/ Personnel Safety	D.2.1	DoH provided recommendations for dust management and monitoring and requested clarification regarding Fibrous materials.	Dust management strategies are outlined in the CEMS and OEMS (PER Appendix series 3B and 3C). Dust monitoring will be undertaken. The Joint Venture has engaged an external organisation to undertake further assessment of the potential Fibrous Minerals within the Resource.	See Section 4.2 "Public/ Personnel Safety and Health".
	D.2.3	DoH provided recommendation for the pest hygiene management onsite.	The Joint Venture is committed to the effective management of pest, weeds, vermin and feral animals which have been incorporated into the CEMS and OEMS released with the PER.	See Section 4.2 "Public/ Personnel Safety and Health".
	D.2.4	DoH provided recommendation for the mosquito management onsite.	The Joint Venture is committed to the health and wellbeing of Project Employees and Contractors and welcomes the opportunity to discuss effective mosquito management programs with DoH.	See Section 4.2 "Public/ Personnel Safety and Health".
	D.1.1 D.1.3 F.3.1	DoH provided guidelines to ensure that adequate treatment and control steps are in place for the RO plant to ensure adequate drinking water quality on site. The DEC's Industry Regulation Group and DoH provided comments and considerations on the design of the sewage treatment plant allowing provision for mosquito management, capacity and sludge disposal.	Comments D.1.1, D.1.3 and F.3.1 are addressed in "Subsidiary Approvals and Compliance" above.	See Section 4.1 "Subsidiary Approvals and Compliance".
	D.3.1	DoH recommends that the Joint Venture consults with DoH representatives in Kalgoorlie-Boulder to ensure that health service requirements (e.g. GPs) and requirements under the *Health Act 1911* are appropriately considered.	Comment D.3.1 is addressed in "Stakeholder Engagement" above.	See Section 4.1 "Stakeholder Engagement".
	D.3.2	The DoH suggested the Joint Venture should liaise with the City of Kalgoorlie-Boulder regarding any requirements under the *Health Act 1911*.	Comment D.3.1 is addressed in "Stakeholder Engagement" above.	See Section 4.1 "Stakeholder Engagement".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	F.2.1	The DEC's Industry Regulation Group requested further information at the works approval stage regarding power station design with respect to fauna impacts.	Comment F.2.1 is addressed in "Air Quality" below.	See Section 4.5 "Air Quality"
	F.2.2	The DEC's Industry Regulation Group queried if the Joint Venture will be using silencing units to minimise noise impacts.	Comment F.2.2 is addressed in "Noise and Vibration" below.	See Section 4.5 "Noise and Vibration".
	K.7	The anonymous authors of Submission K raise concerns regarding the potential impacts of drawdown on gnamma dry-out.	Comment K.7 is addressed in "Groundwater" below.	See Section 4.3 "Groundwater".
Socio-economic aspects	C.11 C.12 C.16 C.17 C.18 C.20	These CDNTS submissions relate to the provision for financial and corporate support for: • Employment and training. • Traditional Owners to seek advice on best practise environmental management practises. • Development of natural and cultural heritage management programs. • Economic opportunities, including business, employment and training opportunities. • Development, preparation and delivery of a cultural awareness package. CDNTS also provided the Joint Venture with objectives for supporting traditional ecological knowledge based programs.	The State and Federal EIA processes have defined impacts that can be considered when assessing a new project. Submissions C.11, C.12, C.16, C.17, C.18 and C.20 go beyond the scope of the State and Federal EIA processes And need not be considered by the EPA. Notwithstanding this, the Joint Venture is actively involved in developing social, education, employment and commercial opportunities associated with the Project for local Indigenous Communities.	See Section 4.2 "Socio/economic Aspects".
Physical Factors				
Soil Quality and Landform	K.3	The anonymous authors of Submission K provide comment regarding drawdown and secondary impacts to adjacent dune fields and surrounding vegetation.	Comment K.3 is addressed below in "Groundwater".	See Section 4.3 "Groundwater".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Surface Water	F.5.2	The DEC's Industry Regulation Group requested further information regarding surface drainage management throughout the Project and potential impacts of shadow effects.	With the use of a diversion drain and appropriate on-site stormwater management, there is likely to be little impact on the surface water hydrology of the surrounding landscape. Significant shadowing effect is unlikely due to the inherently high infiltration rate..	See Section 4.3 "Surface Water".
Groundwater	A.1	The Shire of Laverton has no significant concerns regarding the Water Supply Area/ borefield.	Comment A.1 is addressed in "Stakeholder Engagement" above.	See Section 4.1 "Stakeholder Engagement"
	K.3 K.7	The anonymous authors of Submission K provide comment regarding drawdown, ecosystem impacts and secondary impacts to adjacent dune fields and surrounding vegetation.	The Joint Venture anticipate that there will be no significant impact on either the terrestrial ecosystem or the human use of freshwater gnammas and waterholes due to drawdown associated with dewatering of the resource area for mining..	See Section 4.3 "Groundwater".
Biophysical/ Biodiversity				
Vegetation and Flora	J.1 J.3	The DECs Terrestrial Ecosystems Branch (now OEPA) stated their satisfaction with the proposed management of flora and vegetation and highlighted a few minor technical inconsistencies.	The Joint Venture is pleased to have been able to address all issues to the satisfaction of the DECs Terrestrial Ecosystems Branch (now OEPA).	See Sections Section 4.1 "Stakeholder Engagement" and Section 4.4 "Flora and Vegetation".
	C.14	CDNTS suggested that additional flora and fauna surveys using Traditional Owners were required.	The Joint Venture has undertaken all baseline flora surveys in accordance with the requirement specified in EPA Guidance Statements 51 (for terrestrial flora and vegetation surveys) which is the requirement for proposals to be assessed by the EPA.	See Section 4.4 "Flora and Vegetation".
	F.1.2	The DEC's Industry Regulation Group requested the Joint Venture describe the dust monitoring plan and dust suppressant frequencies.	The Environmental Monitoring Strategy (Appendix 5 of this document) details the dust monitoring strategy and frequencies. The method and rate of use of dust suppressants will be determined based on the location and climatic conditions.	See Section 4.4 "Flora and Vegetation".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	H.5.1	EMB requests residual impacts to Priority flora be mitigated or offset and request the JV provide Priority flora extrapolations for review.	Comment H.5.1 is addressed in "Management/ Monitoring Strategies" above.	See Section 4.1 "Management/ Monitoring Strategies".
	H.6.1	EMB raised concerns regarding local impacts to vegetation communities and requests the stated limits of disturbance on vegetation communities S8, ExL.t2H and S4 are not exceeded.	Comment H.6.1 is addressed in "Management Commitments and Offsets" above.	See Section 4.1 "Management Commitments and Offsets".
	F.5.2	DEC's Industry Regulation Group requested information regarding surface drainage for the Project (excluding the roads) and questioned if there was potential for water starvation.	Comment F.5.2 is addressed in "See Surface Water" above.	See Section 4.3 "Surface Water".
	H.1.1 H.2.1 I.1	EMB raised concerns regarding the potential secondary consequences on biodiversity and ecosystem function resulting from opening up a previously undeveloped landscape. EMB requested that areas subject to indirect impacts are delineated and monitored for impacts with pre-determined trigger levels to initiate management actions, and that this is subject to a condition of the approval. The Wildflower Society drew attention to the need for infrastructure corridors to be well managed.	Comments H.1.1, H.2.1 and I.1 are addressed in "Management/ Monitoring Strategies" above.	See Section 4.1 "Management/ Monitoring Strategies".
	H.3.2	EMB requested that undefined infrastructure locations are defined to adequately assess impacts.	Comment H.3.2 is addressed in "Design" above.	See Section 4.1 "Design".
	H.7.1 K.2	EMB and the anonymous authors of submission K raised concern regarding the long term impacts on biodiversity.	Comments H.7.1 and K.2 are addressed in "Closure" below.	See Section 4.6 "Rehabilitation and Closure".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	K.3 K.7	The anonymous authors of Submission K provide comment regarding drawdown and secondary impacts to adjacent dune fields and surrounding vegetation.	Comments K.3 and K.7 are addressed in "Groundwater" above.	See Section 4.3 "Soil Quality and Landform".
Terrestrial Fauna (including Invertebrate fauna)	J.2 J.3	The DECs Terrestrial Ecosystems Branch (now OEPA) stated their satisfaction with the proposed management of fauna and highlighted a few minor technical inconsistencies.	The Joint Venture is pleased to have been able to address all issues to the satisfaction of the DECs Terrestrial Ecosystems Branch (now OEPA).	See Section 4.1 "Stakeholder Engagement" and Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	C.14	CDNTS suggested that additional flora and fauna surveys using Traditional Owners were required.	The Joint Venture has undertaken all baseline fauna surveys in accordance with the requirement specified in EPA Guidance Statements 56 (for terrestrial fauna) which is the requirement for proposals to be assessed by the EPA.	See Section 4.4 "Flora and Vegetation".
	A.2	The Shire of Laverton suggested fencing for wildlife exclusion from water bodies.	Fencing, and egress methods will be used to exclude, and provide egress opportunities for fauna.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	F.1.1	The DEC's Industry Regulation Group have requested further information regarding fauna tailings management.	Comment F.1.1 is addressed in "Pollution of Land and Water" below.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	H.4.1	EMB requests the Joint Venture provide the marsupial mole habitat fragmentation addendum.	The Joint Venture completed and provided the DEC with an additional report addressing the potential impacts of the Project on the isolation and fragmentation of Marsupial Mole habitat on 23 December 2009 (Appendix 3). This review concluded that the removal of the dunes within the operational footprint is not likely to threaten the conservation of the species either locally or in the surrounding areas.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	H.4.2	EMB requested the Joint Venture provide results of further work being undertaken in regards to Sandhill Dunnart (SHD) habitat criteria.	A supplementary report on habitat assessment criteria and fire age (Appendix 4G) and an assessment of the habitat availability for the SHD in WA were undertaken (Appendix 4E), concluding the habitat in the Operational Area is marginal for SHD. A supplementary Spring survey was undertaken, no SHD were recorded (Appendix 4F).	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	H.4.4a	EMB recommended the Joint Venture develop a monitoring program for SREs to provide further information on the indirect impacts on SREs.	Based on further work undertaken, the Joint Venture has developed a monitoring program (Environmental Monitoring Strategy; Appendix 5) which details SRE monitoring to ensure indirect impacts on potential SREs are minimised.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	H.4.4b	EMB requested the Joint Venture provide a habitat risk assessment for *Kwonkan* sp. 2.	The Joint Venture commissioned further work in autumn 2009, with the aim of collecting *Kwonkan* sp. 2 species and defining the preferred habitat and geographic distribution. No *Kwonkan* sp. 2 were recorded, three habitat types were identified as potentially suitable, of which two occurred both inside and outside the disturbance footprint and one that occurred fully outside the footprint.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".
	H.4.4c	EMB requested the Joint Venture provide information on the size of the *Aganippe* sp. 7 populations outside of the impact footprint.	The Joint Venture is not in a position to determine the size of the population of *Aganippe* sp. 7, either in- or out-side of the proposed disturbance footprint. The Joint Venture assessed the availability of habitat in- and out-side of the proposed footprint, and found suitable habitat pockets that extended over 12 km beyond the proposed footprint.	See Section 4.4 "Terrestrial Fauna including Invertebrate Fauna".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	F.2.1	The DEC's Industry Regulation Group requested further information at the works approval stage regarding power station design with respect to fauna impacts.	Comment F.2.1 is addressed in "Air Quality" below.	See Section 4.5 "Air Quality"
	F.2.2	The DEC's Industry Regulation Group queried if the Joint Venture will be using silencing units to minimise noise impacts.	Comment F.2.2 is addressed in "Noise and Vibration" below.	See Section 4.5 "Noise and Vibration".
	F.4.1	The DEC's Industry Regulation Group requested information regarding the location, type and capacity of the landfill and the associated management of feral animals.	Comment F.4.1 is addressed in "Subsidiary Approvals" above.	See Section 4.1 "Subsidiary Approvals and Compliance".
	H.1.1	EMB would like to see the Joint Venture's management strategies for biodiversity management be made conditions of the Project's approval.	Comment H.1.1 is addressed in "Management/ Monitoring Strategies" above.	See Section 4.1 "Management/ Monitoring Strategies".
	H.3.2	EMB recommended the final locations of items of infrastructure be defined and the Joint Venture provide commitments to avoid conservation significant species and communities. If these cannot be met, EMB recommends maximum levels of impacts be set as a condition of approval.	Comment H.3.2 is addressed in "Design" above.	See Section 4.1 "Design".
	H.7.1	EMB raised concern that the free water provided by the water-filled pit void will have long term impacts on biodiversity and requests management measures to minimise consequent impacts are subject to a condition of the approval.	Comment H.7.1 is addressed in "Closure" below.	See Section 4.6 "Rehabilitation and Closure".
	I.1	The Wildflower Society provides comment regarding management of infrastructure routes with relation to native fauna.	Comment I.1 is addressed in "Management/ Monitoring Strategies" above.	See Section 4.1 "Management/ Monitoring Strategies".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	K.7	The anonymous authors of Submission K raised concerns regarding the potential impacts of drawdown on gnamma dry-out.	Comment K.72 is addressed in "Groundwater" above.	See Section 4.3 "Groundwater".
Subterranean Fauna	H.4.3	EMB requested that the Joint Venture provide the results of further troglofauna work and a troglofauna habitat risk assessment.	A summary report documenting all seven phases of Troglofauna sampling and the habitat assessment is attached in Appendix 3L. The two additional rounds of sampling recorded a number of occurrences of the Isopod inside and outside the Operational Footprint plus a fourth species of Troglofauna (a cockroach) outside of the disturbance footprint. No new occurrences of the dipluran or centipede were recorded. The habitat assessment suggests that lateral and vertical connectivity across the landscape appears likely.	
Emissions and Pollution Management				
Pollution of land or water	F.1.1	The DEC's Industry Regulation Group have provided comment on the management of tailings and requests further information regarding tailings consistency, vegetation root depth, fauna management, heavy metals in leachate, and TSF design.	The Joint Venture acknowledges the importance of managing the Project's tailings storage facility (TSF) to ensure that adverse impacts are prevented. The Joint Venture addressed all technical queries raised by the group.	See Section 4.5 "Pollution of land and water".
	F.6.1	The DEC's Industry Regulation Group requests further information regarding chemical use and storage.	As the Joint Venture is still progressing the detailed design of the facility, details regarding specific chemicals and quantities are yet to be determined; this will be provided during the works approval stage. The Project design will ensure that all storage areas comply with the requirement of applicable Australian Standards such as (but not limited to) AS1940.	See Section 4.5 "Pollution of land and water".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Air Quality (Dust, Gaseous Emissions)	F.2.1	The DEC's Industry Regulation Group commented on gaseous emissions from the power station and requested further information from the Joint Venture at the works approval stage regarding location, design, specific gaseous emissions detail, monitoring and the development of an emergency response plan.	During the works approval stage, the Joint Venture will provide details regarding the location of the proposed power station. Impacts associated with gaseous emissions derived from the proposed power station are not anticipated due to the remote nature of the site. The Joint Venture has committed to undertaking an ongoing program of monitoring and an emergency response plan.	See Section 4.5 "Air Quality".
	D.2.1	DoH provided recommendations for dust management and monitoring and requested clarification regarding Fibrous materials.	Comment D.2.1 is addressed in "Public Safety and Health" above.	See Section 4.2 "Public/ Personnel Safety and Health".
	F.1.2	The DEC's Industry Regulation Group requested the Joint Venture describe the dust monitoring plan and dust suppressant frequencies.	Comment F.1.2 is addressed in "Flora and Vegetation" above.	See Section 4.4 "Flora and Vegetation".
	H.2.1	EMB requests that areas subject to indirect impacts are delineated and monitored for impacts with pre-determined trigger levels to initiate management actions, and that this is subject to a condition of the approval.	Comment H.2.1 is addressed in "Management/ Monitoring Strategies" above.	See Section 4.1 "Management/ Monitoring Strategies".
Noise and Vibration	F.2.2	The DEC's Industry Regulation Group queried if the Joint Venture will be using silencing units to minimise noise impacts.	The Joint Venture does not intend to install silencing units on the proposed power station. The Joint Venture will aim to limit the noise level emitted from the facility to reduce the level of noise exposure to employees and contractors.	See Section 4.5 "Noise and Vibration".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
Other				
Rehabilitation and Closure	C.24	CDNTS requested that Traditional Owners are consulted in regards to closure and rehabilitation of the mine.	The Joint Venture will continue to engage with key stakeholders over the life of the Project on a broad range of aspects including, but not limited to, closure and rehabilitation activities. It is envisaged that Indigenous consultation will include ongoing discussions with the Indigenous Reference Group on environmental management matters including Closure.	See Section 4.6 "Rehabilitation and Closure".
	C.25	CDNTS requested the Joint Venture includes the Traditional Owners in partnerships involved in the 'Commitment to Research' strategy.	The Joint Venture will seek input from a variety of stakeholders and welcomes the input of knowledge and experience from local Indigenous communities relevant to rehabilitation. The Joint Venture will facilitate the inclusion of members of the Indigenous community in rehabilitation activities for the Project via the Indigenous Community Partnership.	See Section 4.6 "Rehabilitation and Closure".
	I.3	The Wildlflower Society submitted comment on the rehabilitation, closure and bonding of the Project.	The Joint Venture agrees with the importance of an appropriate rehabilitation program and is committed to developing an adaptive rehabilitation strategy. The Conceptual Closure and Rehabilitation Management Strategy (PER: Appendix series 3D) outlines proposed pathways to the identification, implementation and successful achievement of completion criteria for the Project. A Rehabilitation Research Program will also be designed and will be carried out over the life of the Project. Bonds for the Project will be determined by the appropriate regulator.	See Section 4.6 "Rehabilitation and Closure".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	H.7.1	EMB raised concern that the free water provided by the water-filled pit void will have long term impacts on biodiversity and requests management measures to minimise consequent impacts are subject to a condition of the approval.	Comment H.7.1 is addressed in "Closure" below.	See Section 4.6 "Rehabilitation and Closure".
	G.2	DMP stated that the Joint Venture will need to submit a Preliminary Closure Plan with the Mining Proposal.	The Joint Venture acknowledge the requirement to submit a Preliminary Closure Plan and will look to fill any gaps in the Conceptual Closure and Rehabilitation Strategy released with the PER.	See Section 4.6 "Rehabilitation and Closure".
Closure	H.7.1	EMB raised concern that the free water provided by the water-filled pit void will have long term impacts on biodiversity and requests management measures to minimise consequent impacts are subject to a condition of the approval.	The availability of free water within the pit void is not anticipated to result in long-term biodiversity impacts, as the water will be hypersaline, therefore unlikely to lead to as increase in feral animal populations. Native and feral fauna will be deterred from entering the void (s).	See Section 4.6 "Rehabilitation and Closure".
	I.2	The Wildflower Society states the importance of mine closure planning and requests the final management plans for the project be made publically available.	The Conceptual Rehabilitation and Closure Strategy has been made available to the public with the PER, updated strategies will be documented as the mine progresses and will be released to all interested stakeholders.	See Section 4.6 "Rehabilitation and Closure".
	K.2	The anonymous authors of Submission K raised concern that the Joint Venture had not adequately considered biologically diversity and integrity at closure, in particular conservation significant species and communities.	All direct impacts to the DRF *Conospermum toddii* and the Yellow/Orange Dunefield are being avoided in the construction, operation and closure of the Project. Thorough planning and research will be undertaken during the operation of the mine to ensure that closure and rehabilitation is effective in terms of returning an appropriate level of biological diversity to the site.	See Section 4.6 "Rehabilitation and Closure".
	K.4 K.5	The anonymous authors of Submission K raised concern regarding the ecosystem impacts of a permanent pit void and the long term implications of inadequate management into the future.	The costs and Greenhouse gas emissions associated with backfilling of the mining voids are substantial and would not result in an overall environmental benefit. The mine void is not anticipated to present significant ongoing environmental impacts on the landscape.	See Section 4.6 "Rehabilitation and Closure".

Aspect/ Value	Comment number	Brief description of submission/ comment	Brief description of Joint Venture response	Section 4: Detailed response
	K.3 K.7	The anonymous authors of Submission K provide comment regarding drawdown, ecosystem impacts and secondary impacts to adjacent dune fields and surrounding vegetation.	Comments K.3 and K.7 is addressed in "Groundwater" above.	See Section 4.3 "Groundwater".

3.2. OTHER SUBMISSIONS AND COMMENTS

3.2.1. Regulator Feedback Received Outside of Formal Process

Outside of the formal EPA process the Joint Venture received the following submissions:

- The Shire of Menzies complimented the Joint Venture on the PER document and the assessment of environmental issues, considering it a comprehensive and professional document. This submission was addressed directly to the Joint Venture and by-passed the EPA process.
- The DEWHA Assessment Officer stated that the PER is more than adequate for DEWHA's assessment needs and have no further comment. This submission was provided to the EPA, but outside of the formal public comment period.

3.2.2. Community Consultation and Communication

During the Public Comments Period the Joint Venture held a series of advertised information sessions in Perth, Kalgoorlie and Menzies on 2, 4 and 5 November 2009, respectively (copies of the advertisements are reproduced in Appendix 1). These sessions were open to all members of the community and a total of 80 people participated across the three sessions. To supplement the November Public Information sessions, a targeted Indigenous Community information session was also held in Kalgoorlie during December. A total of 20 community members attended. During these sessions, the community was provided with an opportunity to raise questions or query aspects of the Project. Table 3.2 summarises the questions raised in November.

Table 3.2 Summary: Queries and questions raised during the November Public Information Sessions

Venue	Question	Response
Consultation Process		
Perth	Who were the key reference groups consulted?	The Joint Venture has conducted formal discussions with various groups including: • Non-government conservation groups including the Conservation Council of Western Australia, Friends of the Great Victoria Desert, Malleefowl Preservation Group, Kalgoorlie Naturalists Group, Wildflower Society and the Wilderness Society. • Indigenous groups including the Goldfields Land and Sea Council (GLSC), North East Independant Body (NEIB), Central Desert Native Title Service (CDNTS), Tjuntjuntjarra and wider Goldfield Community. This consultation started at the beginning of the Joint Venture in 2002. • Carbon Neutral and State/ Federal emissions groups. • Road Steering Committee including potential users of the road, Tjuntjuntjarra Community, and the various local government agencies and pastoralists. In addition to the above groups the Joint Venture established a Peer Review Panel (see question below).
Kalgoorlie	Who were the special interest groups that the Joint Venture consulted with?	
Kalgoorlie	How were the members of the Peer Review Panel selected?	The Joint Venture selected the Peer Review Panel specifically because of their ability to challenge, test and scrutinise the Project and to assist the Joint Venture to improve the quality of the environmental impact assessment documentation, baseline surveys design and offset selections for the Project. As described in Chapter 12 of the PER, the Panel consisted of community members, leading scientists and legal professionals.

Venue	Question	Response
Kalgoorlie	Did the Joint Venture consult with the right people regarding Indigenous heritage values across the Project area? Members of the Tjuntjuntjarra community are connected to the land under the control of the Joint Venture. The land is still living and life-giving to members of the community.	The Joint Venture has followed the relevant protocols (i.e. the Goldfield Standard Heritage Agreement) regarding Indigenous consultations and ethnographic surveys. The Joint Venture recognises that there is the potential that other people within the region may have cultural knowledge for the Tropicana Project Area. The Joint Venture has conducted consultation with a variety of groups in order to learn about Indigenous values in the area, this information has been considered during the planning for the Project. The JV holds the view that this form of consultation is an ongoing process that continues at present and will continue through life of the Project for the purpose of enhancing current heritage understanding and improving Indigenous engagement and involvement in the Project. The Joint Venture is keen to expand its Indigenous consultation to additional interested people in the region to facilitate a meaningful partnership between the Joint Venture and the Indigenous community so that all people can have input with the aim of ensuring appropriate management of important areas and sites.
Kalgoorlie	Will the story sites be protected?	The Joint Venture is working to understand what additional heritage knowledge of the Project area may exist within the desert communities (or other Indigenous groups) to ensure that all relevant and appropriate knowledge of sites and stories is incorporated into the Joint Ventures management of heritage for the Project (and other exploration activities). The Joint Venture would like to carry this consultation out as soon as possible to make sure all people can be involved. The Joint Venture is actively seeking out complementary information from other sources to be incorporated into what the Joint Venture has gathered to date.
Infrastructure Corridors		
Kalgoorlie	The Joint Venture has previously discussed the option of using the Transline Road as the mines' main access road. Please discuss	The Joint Venture has discussed the road options with a community based Steering Committee comprised of the Local Government Authorities, Main Roads, Indigenous groups and other interested parties. The Joint Venture is seeking approval for the installation of a Mine Access Road via the Pinjin Infrastructure Corridor. The Transline-Tropicana (TT) Infrastructure Corridor would only be used for communications infrastructure. The TT option was discounted as the main access road. The Pinjin option is the lower cost option, is shorter and would enable a single day round trip from Kalgoorlie which represents a safety and scheduling advantage. The TT option is the preferred communications link at present because the Transline is the closest fibre optic line to the Operational Area. The Joint Venture continues to investigate options to include the communications link in the Pinjin Infrastructure Corridor. However, at this stage approval is sort for a separate communications and road option as the base-case scenario.
Kalgoorlie	What will be the drive time from Kalgoorlie to the Operation Area?	Currently the drive time is six to eight hours. The Pinjin option will have a drive time of approximately four hours which will allow for a single day turn-around from Kalgoorlie.

Venue	Question	Response
Kalgoorlie	Please explain limitations to road use.	The Joint Venture will not restrict access to the sections of the new Mine Access Road that will be installed over existing tracks such as along the Nippon Highway. The road restrictions will start where the new road heads north from the Nippon Highway. For example the existing track east of Pinjin Station will be upgraded by the Joint Venture to enable safe use by Project vehicles and suppliers but will remain open to the general community. The Access Road will be a private road constructed under the requirements of the *Mining Act 1978*. This means that the Joint Venture has a duty of care to ensure that all users of the road are safe and comply with all the site safety and environmental requirements. The Joint Venture will be managing the use of the road by third parties through access agreements. The Joint Venture will expect that 3rd party users meet the same safety and environmental standards as the Joint Venture personnel and contractors (e.g. no off- road driving). Agreements made with third-party users would be for the life of the mine only.
Menzies	Will there be a need for miscellaneous license/s for the Pinjin Road or need for permission from neighbouring stations?	The existing public road will be used from Kalgoorlie to the Pinjin Station. A Miscellaneous License will be used to install the road from Pinjin to the Operational Area. Consultation with neighbouring stations and other interested parties has occurred and will continue.
Menzies	Will the access road go through Pinjin Station? Will it affect the community developing there?	The road will go through the station but will be located well south of the homestead. The Joint Venture has been in close consultation with the Station Manager and is also working with the Goldfields Land and Sea Council to understand their plans / activities for the station. Any impacts are expected to be minimal as at most only small number of trucks will be utilising the road per day.
Perth	What will happen to the access road and non-Joint Venture users of the road when the mine closes?	Under the environmental approvals presently being pursued, the Joint Venture will be required to rehabilitate the road at closure. If other parties (e.g. local government, other mining companies) propose to keep the road into the future a subsequent approval / and land tenure arrangement would be required.
Menzies	Will the communications corridor need a road?	The communications corridor will only need a road during construction. This will mostly be along already established tracks. Post installation, only a minor track will be required for inspection and repairs to communications infrastructure.
Tailings Storage Facility		
Menzies	Will the tailings dam be lined?	The facility will be lined and placed adjacent to the waste material landform to minimise environmental issues and reduce rehabilitation costs.
Pit Void		
Perth	Please elaborate on the rehabilitation of the mine pit. What consideration has been made to back-fill, and what is the planned management of pit water?	The surface area of the void will be approximately 400 ha if the mine reaches its greatest anticipated extent as outlined in the PER. The depth of the pit will be approximately 300 - 400 m and the depth to groundwater in the Operational Area is approximately 20 - 30 m. Modelling by Pennington Scott (details in the PER) suggests that groundwater will return to approximately 100 – 150 m above the pit floor. As the evaporation potential at the Operational Area is high, the majority of pit water is expected to evaporate quickly.

Venue	Question	Response
Perth	Will the mining pits be backfilled?	The Joint Venture will consider back-filling opportunities where practical e.g. if two pits are operating. Analysis has shown that the Project will be unviable if the pit is completely backfilled. In making its decision regarding back-filling, the Joint Venture has balanced the economic cost and potential environmental costs/benefits. The Joint Venture considers that the environmental benefits to fauna of complete backfilling would be negligible. Water that accumulates in the pit will be hypersaline and therefore will not act as an attractant to introduced fauna.
Biodiversity		
Perth	Can you please elaborate on the proposed Biodiversity Offset?	The aim of the Biodiversity Trust is to benefit the community/ environment in the long term by increasing knowledge which would assist science and management in the region, providing benefit into the future, beyond the cessation of the Project's activities. The Board of the Trust is envisaged to be comprised of representatives of the Joint Venture, conservation groups, Indigenous groups, relevant experts and other groups if required. The aim is to develop the Trust in such a way as to enable other interested groups to be able to access and use the knowledge generated by the Trust's activities. Potential targets of the trust include Priority and threatened species (listed at the State or Federal level), assessment of the impact and management of fire and/ or an assessment of the impact of introduced fauna. Details of the Trust are currently being discussed with relevant groups including the DEC and DEWHA. The Joint Venture does not consider that a 'land-swap' would be an appropriate offset as there is no appropriate land available in the region that the Project will impact (GVD).
Menzies	Are there any issues with the Marsupial Moles? Could their presence hold up the project?	The biggest challenge is not the moles but the subterranean species new to science e.g. the new Troglofauna. As they are previously unidentified there is no background information on these animals. The Joint Venture are working within the EPA's guidance and are utilising the precautionary principles and have undertaken additional surveys to provide additional information on these species.
Menzies	Are there many rabbits out near the site?	Historic evidence suggests that not many rabbits occur in the Project area, probably because it is too dry. Some camels and goats do occur as well as feral cats, dingos and foxes; although anecdotal evidence suggests that in areas with dingoes there are fewer foxes. Joint Venture (exploration) field crews help identify animals in the area by collecting scats which are later assessed for bone and hair content to indentify prey species.
Rehabilitation		
Kalgoorlie	Is the rehabilitation plan available?	A Conceptual Closure and Rehabilitation Strategy was provided with the PER (Appendix 3D of the PER). The aim is for the final landforms to blend as much as possible with the surrounding environment. For example, the waste material landforms will be gently sloped (like the surrounding dunes), rather than benched as is typical of waste landforms in the Goldfields. The Joint Venture plans to rehabilitate all areas that are disturbed by the Project, except for the pit, which may be partially back-filled.

Venue	Question	Response
Water		
Kalgoorlie	What is the quality of the water that will be abstracted to supply the mine?	The Joint Venture has completed water exploration drilling across an area of over 40 x 40 km. The proposed borefield forms part of the Officer Basin, the target aquifer is laterally extensive and 250 – 300 m deep. The aquifer is a sand aquifer with a fine pore space. Water quality is approximately 70,000 TDS (twice as salty as sea water) and therefore has limited use to agricultural/ community/ industry. The target aquifer is sandwiched between largely impervious layers and therefore the Joint Venture expects no impact to vegetation or gnammas.
Menzies	How will you be dealing with waste water disposal on-site?	We will be using wastewater disposal systems that enable the recycling of grey water. The site will not have a garden; it will make use of the native vegetation already onsite. Grey water will be re-used in the village toilets and in the Processing Plant.
Menzies	Where will the potable water be coming from?	The Joint Venture will have a Reverse Osmosis plant on site – any waste water will be re-used through the processing plant rather than being disposed of directly.
Energy Source		
Kalgoorlie	What are the potential energy sources and opportunities for the region?	The Joint Venture has investigated several options including solar thermal (ST), coal, diesel and gas. On ST alone, the Joint Venture (in collaboration with an engineering consultancy) has invested approximately one million dollars on an ST assessment. ST has significant technical and economic challenges at the scale required to support the Project: • Most ST power stations around their world are several orders of magnitude larger that the power station required for the Project. • Most ST power stations are connected to a grid supply, not stand alone as would be required for the Project. • ST requires a large initial expenditure, with small ongoing costs. The Joint Venture applied for assistance under the Federal Government's Renewable Energy scheme (for over one hundred million dollars). As the assessment criteria for the grant was modified during the assessment process (rendering the Joint Venture proposal ineligible) it was considered unviable for the Joint Venture to continue to pursue this option for the Project. Generally speaking, if an ST power station could be made viable, it would have the potential to become the major power source for regional areas such as Kalgoorlie.
Air Emissions, Carbon Footprint and Greenhouse Gases		
Perth	Can the panel elaborate on the emissions reductions measures used by the Joint Venture in the design of the Project?	The Joint Venture has selected a mining fleet and processing plant taking into consideration energy efficiencies. For example, the Joint Venture is proposing to use new technology (High Pressure Grinding Rolls) in the processing plant to increase efficiency by about 10 - 20% of traditional grinding techniques. The site layout has been designed to reduce onsite vehicle movement. The Joint Venture has undertaken (and continues to undertake) investigations into other options to improve efficiencies.

Venue	Question	Response
Kalgoorlie	How was the Project's carbon footprint calculated?	The carbon footprint presented in the PER is the maximum mine size/ worst case footprint. The footprint assumes that the mine will reach its largest anticipated extent, and that the sole fuel supply is diesel. It incorporates haulage, freight and fly in fly out transportation. In reality, the carbon footprint is likely to be less as the Project may not reach its maximum capacity and lower-carbon diesel alternatives may be used as the power supply.
Economics		
Kalgoorlie	What are the economic benefits to the region? Will the Project utilise FIFO / DIDO from Kalgoorlie.	Direct, indirect and consumptive effects expected for the Goldfields and for WA/ Australia as a whole were explained during the meeting, based on the analysis by Compelling Economics (Appendix 2A4 of the PER). Economic modelling suggests that by employing 700 people and spending approximately three hundred million dollars in the region and the state will see a benefit to 2,300 jobs and a financial benefit of approximately eight hundred and thirty million dollars. The Joint Venture will consider FIFO and DIDO from Kalgoorlie and other centres (e.g. Perth and Adelaide). DIDO has safety and environmental concerns (e.g. fatigue and road-kill).
Kalgoorlie	Has there been any discussion with neighbouring gold miners with regard to co-development opportunities?	The Joint Venture is the dominant land holder in the area and there are a number of neighbouring exploration/ mining companies who are actively pursuing prospects on their own tenements. Some of the explorers in the area, like Corvette, are well advanced in their exploration and appear to be having success. The Joint Venture will consider co-development opportunities with other explorers as they progress.
Menzies	How viable is the project – will it go ahead?	Based on the current resources and Prefeasibility Study Cost the Project is considered viable. For the Project to be viable; in terms of the capital outlay and infrastructure requirements; it needs to be a fairly large project and this is why we plan to establish a Project with an annual production rate of up to 7Mt/annum.
Menzies	Is the 2013 timeframe realistic?	The timeframes are based on the assumption that the approvals processes are completed within the standard estimated timeframes. In preparing the Feasibility Study we are looking closely at the timeframes and working within them as much as possible. If the approvals are delayed, and depending on how long they are delayed, it could affect the commencement of construction and operations. Site construction cannot start until road construction is close to completion.
Employment Opportunities		
Menzies	How many employees will there be onsite? Will all employees stay onsite?	There will be up to approximately 700 employees in the construction phase – then up to approx 400 once operational. All employees will stay onsite during their shift. The drive to site from the nearest communities is some three to four hours away which restricts the opportunities for DIDO operations The Joint Venture are considering FIFO from Kalgoorlie and Perth plus assessing the viability of accessing local Aboriginal Communities.
Menzies	Will there be scope for work experience for high school students?	There will be some scope for school involvement but that will need to be carefully managed for occupational health and safety considerations, and to fit in with school and operational timeframes. The Joint Venture is developing a Youth Engagement Strategy which aims to support and encourage young people to stay at school to complete year 12. This includes sponsorship of the Kalgoorlie Girls Basketball Academy, the Goldfields Football Academy and the Graham Farmer Foundation – Follow the Dream /Partnerships for Success program. We have also worked with Curtin VTEC to develop an Indigenous traineeship for Field Assistants.

4. RESPONSE TO SUBMISSIONS

The Joint Venture has not edited the content of the submissions that are reproduced below. Any typographical or grammatical errors are the respective authors own.

4.1. PROJECT DESIGN AND MANAGEMENT

Stakeholder Engagement	
Formal	
Submission Number: A.1	I have tabled the above PER at Council, however there does not seem to be any major concerns raised by Councillors in this project. This is primarily because the main mining operations and processing plant are in the Menzies Shire. While the proposed borefield is in the Laverton Shire it has little impact or concern for Council.
Submission Number: A.3	Council is generally supportive of such projects and wishes the proponents every success because of the benefits to the wider Goldfields region.
Submission Number: B.1	The Department of Water (DoW) has reviewed the Public Environmental Review and is satisfied that the advice previously provided has been incorporated. The DoW now finds this proposal acceptable and has no further comment.
Submission Number: E.1	I am of the view that if the Proponent adheres to the commitments outlined in the Heritage Management and Protection section of the Document, and the Heritage Management Strategy provided to the Department of Indigenous Affairs (DIA) on 30 July 2009, they will meet their obligations under the *Aboriginal Heritage Act, 1972* (AHA).
Submission Number: G.1	The Department has received and reviewed the PER for the Tropicana Gold Project. The Department considers the comments made in the submission dated 1 May 2009 for the Draft PER to be still relevant. The Department has no further comments to make for the September 2009 PER. The PER is considered adequate to address issues for the current stage of the Project.
Submission Number: J.1	The proposal manages the flora and vegetation factors adequately.
Submission Number: J.2	Fauna issues are comprehensively assessed and management of fauna factors appears to be adequate.
Response: The Joint Venture is pleased to have been able to adequately address the potential concerns of the Shire of Laverton, DoW, DIA, DMP and OEPA in the PER documentation. The Joint Venture looks forward to working with the local Shires and relevant regulators as the Project progresses.	
Submission Number: D.3.1	**Provisions of health services** • The proposal has the potential requirement for health services arising from increased population numbers to meet the workforce needs of this proposal. • Although consideration should be given for the required GP services, it is essential that the impacts on the Department of Health and the health services provided by the WA Country Health Services in the region are also considered. These services are likely to be utilised by the proponent and its employees and it is important that these services can meet the increases in population size. It is recommended that the proponent consults with Department of Health representatives in Kalgoorlie-Boulder to ensure that service requirements can be appropriately considered. Contact details are available at www.wacountry.health.wa.gov.au

Stakeholder Engagement	
Submission Number: D.3.2	It is important that the proponent recognised the need to liaise with the City of Kalgoorlie-Boulder regarding any requirements under the *Health Act 1911*. The Department of Health will be pleased to assist with any health issues to support considerations by the City of Kalgoorlie-Boulder.

Response:

The Joint Venture recognises two separate issues in the above comment from DoH:

1. Potential increased demand on existing health services in the region; and,
2. Requirements under the *Health Act 1911.*

The Joint Venture will have medical staff on site for all stages of the Project to provide medical support and assistance to the site Employees and Contractors. It is not envisaged that the Project would result in increased demand for health and emergency services in the region during operation although there may be some increase depending on the number of employees becoming new residents of the Goldfields Region. During construction there is a high likelihood that the construction workforce will be sourced from the Goldfield Region. Personnel involved in construction of this type tend to be highly mobile during the relatively short nature of this work.

The Joint Venture has met with DoH staff in Kalgoorlie to discuss the Project and will continue to liaise with them, regarding potential impacts to, and synergies with, the provision of health services in the region.

In regard to the *Health Act 1911* requirements, the Joint Venture will work with the Shire of Menzies as the responsible local council for the Project area, and the relevant sections of the DoH to obtain all the required approvals for the Project. It is envisaged that a scoping meeting will occur in the second half of 2010 to ensure that everyone has a clear understanding of the *Health Act 1911* approvals, anticipated timelines and the information required by all parties.

Submission Number: K.1	Having attended AngloGold Ashanti/ Independence Group's public environmental review information session of early November 2009, we are very concerned over both the short more particularly the long term impact that the huge open pit operation will have on its surrounding flora, fauna and vegetation.

Response:

The Joint Venture acknowledges that there is a potential for a large mining project to have a significant impact on the environment and local communities if not designed and operated correctly. As required by the WA *Environmental Protection Act*, *Mining Act* and the EPA position statements and guidelines every possible effort should be made to prevent or minimise impacts associated with a new project. As discussed in the PER (Chapters 3 and 5), the Joint Venture has followed the intent of environmental protection and sustainability by taking into consideration the following principles:

- Precautionary principle
- Intergenerational equity
- Conservation of biological diversity and ecological integrity
- Waste minimisation

and by adopting the hierarchy of control which aims to avoid (eliminate), substitute (change), minimise (engineering controls), and adopt procedures (administrative controls). The Joint Venture has endeavoured to design a project that will have a limited impact on the local environment. The Joint Venture is committed to "managing its activities in an environmentally and socially responsible manner" (PER, page xxi) and in "developing the Project, the Joint Venture aims to deliver an environmentally responsible project in line with leading practices, management and technologies" (PER, page xxxv). The Joint Venture has attempted to assess all the likely impacts associated with open-cut mining on the flora, fauna and groundwater and while there is an initial direct impact associated with the clearing of vegetation and the removal of some fauna habitat the restoration of the site post mining aims to return these environmental values (refer to Section 7 and 10 of the PER). Long-term potential impacts of the pit (e.g. groundwater) have been discussed in the PER (pg 7-100 and Appendix 2 -B17) and this document. By adopting the proposed management measures and implementing its proposed monitoring strategies, perceived and actual impacts can be managed in an environmentally and socially acceptable manner over the life and post-closure period of the Project. Further information on the management of the operations (and construction, commissioning, rehabilitation and closure) of the Project can be found in Chapter 5 of the PER, as well as the "Groundwater" and "Closure" sections of this document (pages 76 and 89).

Stakeholder Engagement	
Submission Number: C.1	Traditional owners be treated as primary stakeholders as they are in the unique position of having 'private' interests in the Project Area as the Traditional Owners of the land and those people with whom the Joint Venture will need to develop and maintain ongoing, long-term relationships with.
Submission Number: C.2	There be focussed consultations with the Traditional Owners via Central Desert in relation to all matters addressed in these submissions.
Submission Number: C.22	In the future, the Joint Venture must recognise the importance of proper Traditional Owner input regarding the environment and consult with Central Desert on behalf of the Traditional Owners.
Submission Number: C.23	The Joint Venture agree to Central Desert's Proposal

Response:

The Joint Venture Manager (AngloGold) has been actively mining and exploring in the Goldfields for over two decades. Over this period AngloGold has sought to establish and maintain positive long standing relationships with the Indigenous people and communities in the region. As discussed in the PER, in relation to exploration and the proposed mining operation, the Joint Venture has consulted extensively with representatives from these Indigenous communities. The Joint Venture established a consultation and engagement process for the Project which is open to a wide range of stakeholders and has provided regular access to Project updates and environmental information.

The Wongatha Native Title Claim had legal standing in respect to tenure and heritage management over the Joint Venture's exploration and project areas until dismissed by the Federal Court in February 2007. The long established practices employed by AngloGold for heritage (and adopted by the Joint Venture) became the standard for all Goldfields Land and Sea Council (GLSC) managed areas during the later stage of the Wongatha Claim.

Prior to the 2007 Native Title Claim dismissal, the established heritage management protocol (agreed by the registered Native Title Claimants and the Joint Venture) was to engage with the Wongatha Heritage Management Team under their governance structure and liaising with the GLSC who were the claimants' Representative Body, in respect to heritage and Native Title Act responsibilities. Nonetheless, the Joint Venture also sought to keep Central Desert Native Title Services (CDNTS) and other Indigenous groups informed of the Project's development.

Following the dismissal of the Wongatha Claim, the State Government recommended the existing heritage management practice be continued for the Project area, provided this was endorsed by the relevant stakeholders. "Letters of Comfort" were provided to the State Government by the GLSC, CDNTS and the North East Independent Body Aboriginal Corporation (NEIB) which provided the Wongatha Heritage Management Team. Each group agreed to continue to apply the existing heritage management protocols for all Joint Venture exploration and project areas.

Since the Wongatha dismissal (2007) and until the present day, no replacement Native Title claim has been registered over the Project area. As a result, this has required an increased effort in consultations to ensure every opportunity is available for Indigenous stakeholders to have input into the Project's planning and design. The Joint Venture recognises that the Native Title claim status may change over the life of the Project and 'key' stakeholders may change including Indigenous representatives and administrative bodies. In keeping with this situation, the Joint Venture has sought to be inclusive rather than exclusive in its consultations with Indigenous Stakeholders.

The Joint Venture has been receptive to all points of view and placed a high importance on Indigenous interests. The summary of consultations by groups provided above (Figure 6.1) shows that 37% of all consultations were held either directly with Indigenous community members, with Native Title representative bodies (e.g. NEIB, GLSC or CDNTS), the Department of Indigenous Affairs (DIA) or other Indigenous groups[1].

Table 4.1 of the PER shows that the Joint Venture has communicated regularly with the GLSC, NEIB and CDNTS, as well as periodic communication with other Indigenous groups, and representatives from communities including Tjuntjuntjarra, Coonana

[1] Please note that there was a typographical error in Figure 4.2 – "Indigenous Agency" was mislabelled as "Department of Indigenous Affairs", further explanation is found in Section 6.1).

Stakeholder Engagement

and Indigenous stakeholders residing in Kalgoorlie and the Northern Goldfields.

At a Project update meeting for Indigenous Stakeholders (attendance by open invitation) in December 2009, those in attendance supported the concept of establishing an Indigenous Reference Group. The intent of the Reference Group is to provide a forum for members of the Indigenous community to:

- regularly receive Project updates;
- raise any issues or concerns (i.e. heritage, environmental);
- contribute to the Project's environmental management; and,
- discuss ideas for new opportunities to engage directly or indirectly with the Joint Venture (i.e. social and commercial opportunities).

The Joint Venture plans to maintain its open and inclusive consultation philosophy going forward. The Joint Venture recognises the role CDNTS fulfils in managing Native Title rights. The Joint Venture will continue to maintain open communication channels with all relevant Indigenous groups in the area as has been its practice to date, including CDNTS. This approach will ensure that the future agreements between the Joint Venture and Indigenous Stakeholders will recognise cultural values and provide a wider range of mutually beneficial opportunities, including contracting and employment.

Design	
Formal	
Submission Number: F.5.1a	**Category 6: Mine dewatering** Pit dewatering • This category is not considered relevant as water recovered from the mining area will be used for dust suppression and processing and therefore not specifically released into the environment. However will holding ponds/evaporation ponds be required for excess amounts of water or is it anticipated that given the limited water resource for the project that the water will be quickly utilised at a fast turn over rate?
Response: The Joint Venture agrees that Category 6: Mine Dewatering Prescribed Premises as specified in the Environmental Protection Regulation is not anticipated to be necessary as the volume of water predicted to be generated during dewatering activities will be minimal in comparison to the volume of water required for operations (e.g. processing and routine dust suppression). It is acknowledged that the Joint Venture will be installing water storage facilities that will be either lined ponds/dams or storage tanks. These facilities will be used to temporarily hold water generated either from dewatering activities or following significant rainfall events. Specific details about the dewatering infrastructure will be provided to relevant Agencies via the Projects future mining proposals.	
Submission Number: H.3.1	**PROJECT DEFINITION** **Issue:** Developing two access roads will increase the impact of the proposal. ***Recommendation 6:*** *That only one access route is developed incorporating both the access road and the communications infrastructure corridor.*
Response: The Joint Venture has assessed two potential options for the Project's Mine Access Road and only plans to establish one access road (the Pinjin option). As detailed in the PER the Joint Venture plans to established the project Access Road along the Pinjin Corridor. The Pinjin option was selected over the alternative Tropicana-Transline (TT) Corridor because it is the most direct route between Kalgoorlie and the site, thus it has the lowest greenhouse gas emissions associated with construction and operation (a 380 km one way trip to Kalgoorlie over a 480 km one way trip). Both routes have been assessed for their potential to impact on the regional environmental and social values and the Pinjin option appears to be similar or better than the TT Corridor option considered. The TT Corridor has been selected as the preferred communications corridor at this point in time based on the premise that the most likely communication solution adopted will be a fibre optic to link to the national network. This decision was made because there are no existing communication services in the immediate vicinity of the Pinjin Corridor. If the Pinjin option was to be selected it would require the installation of an additional 100 km of fibre optic cable to Kalgoorlie, along with the additional clearing and permitting requirements for the extra disturbance. The buried fibre optic cable via the TT Corridor will require the clearing of a corridor width of approximately two metres. The cleared area will be revegetated post installation. The Joint Venture is evaluating alternative communication technology that could be installed along the proposed Pinjin Corridor. In the event that this option is determined to be feasible, the Joint Venture would not develop the TT.	
Submission Number: H.3.2	**PROJECT DEFINITION** **Issue:** The final locations of the borefield, accommodation village and access roads (including locations of borrow pits) have not been defined, nor the impacts assessed. ***Recommendation 7:*** *That the proponent defines the proposed locations and footprints of outstanding areas, and provides commitments to avoid defined conservation significant species and communities.* ***Recommendation 8:*** *That, if Recommendation 7 cannot be implemented, maximum acceptable levels of impact on conservation significant species and communities be set and become a condition of approval.*

Design

Response:

All infrastructure will be located within the proposed 3,440 ha footprint, all of which has been assessed for environmental and social constraints. The PER does identify the location of the Mine Access Road and the village, these are shown in Figures 1.2, 2.1 and ES2 and are reproduced in Figures 1.1 and 1.2 of this document. The outer extent of the Minigwal Water Supply area was presented in Figure 7.4 of the PER. It is acknowledge that the exact route of the pipeline and the specific locations of the bores and the borrow pits have not been defined. To address this, the Joint Venture has made commitments in the PER to minimise adverse impacts on the environmental values. For example the PER outlines on page 2-27 that borrow pits will be required at intervals of approximately 10 - 25 km along the Pinjin Infrastructure Corridor and have been accounted for in the overall clearing footprint. The Joint Venture has also committed to locating borrow pits along the Pinjin Infrastructure Corridor such that:

- Borrow pit locations will avoid DRF.
- Borrow pit locations will avoid known locations of listed fauna.
- Borrow pit locations will avoid known heritage sites.

Impacts to Priority or other conservation significant flora, vegetation communities of conservation significance and the preferred habitat of conservation significant fauna will be minimised (if not avoided).

In the Operational Area, there will be a series of up to three borrow pits. The clearing required for these has been incorporated into the overall clearing footprint and will not result in any clearing outside of the proposed Operational Area (Mining Leases). The Joint Venture will locate borrow pits and the quarry within the Operational Area footprint according to the same criteria applied for borrow pits along the Pinjin Infrastructure Corridor (i.e. avoid locations of DRF, known listed fauna and known heritage sites). All borrow pits will be rehabilitated prior to the end of the Project's life.

Like the borrow pits, clearing impacts from the development of the village, borefield and the water pipeline will avoid known DRF and locations of most Priority Flora recorded in the area. Impacts to locally restricted vegetation communities (as shown in Figure 7.4 of the PER) will also be minimised (or avoided).

Submission Number: D.1.3, F.3.1, F.4.1	See Subsidiary Approvals below
Submission Number: A.2, F.1.1	See Pollution of Land and Water below
Submission Number: F.5.2	See Surface Water below

Management/ Monitoring Strategies	
Formal	
Submission Number: C.15	Any assessment of the environmental and other risks associated with the Project must involve substantial input from the Traditional Owners of the land who have a unique perspective on potential impacts as the traditional land owners.

Response:

To comply with the EPA requirements and to maintain open communication and consultation with stakeholders, the Joint Venture continues to provide opportunities for a broad range of stakeholders including Indigenous stakeholders to contribute to the risk assessment process for the Project through regular briefing sessions and one on one meetings. As indicated in Figure 6.1 37% of all consultations undertaken have either been directly with or including Indigenous community members. During these sessions stakeholders were provided with conceptual designs for the Project along with environmental information obtained during surveys and were provided an opportunity to raise concerns about the options being considered.

For example; while the Project team was evaluating the two different Access Road options for the site, an Access Road Steering Committee was established. This committee included representation from a range of stakeholders including representatives from Indigenous communities. Comments and concerns raised during these sessions were then documented in the Project Risk Assessment and were considered when assessing the best access road option.

By acting to reduce the likelihood and/ or consequence of all identified risks for the Project, the Joint Venture has reduced any perceived or actual impacts on environmental and heritage risks for the Project. Regarding the existing EIA process the Joint Venture has adopted an inclusive approach which has provided Indigenous stakeholders with opportunities to contribute to the identification of environmental risks associated with the Project. These comments have been incorporated and addressed by the Project team.

The risk assessment completed for this phase of the Project will be periodically reviewed and updated to take into consideration new information and concerns; the Joint Venture therefore envisages that once the Indigenous Reference Group is better established it will provide a more effective channel of communication between all Indigenous interest groups and individuals. This aligns with the Joint Venture's open and inclusive approach to consultation. There is a need to provide consultation opportunity to a wide Indigenous stakeholder group, covering both the native title connections but also the broader local Indigenous community keen to be involved. The Reference Group will be regularly consulted to ensure that risks are identified and that the risk ranking takes into consideration Community concerns. In relation to impacts to heritage (archaeological or ethnographic), the Heritage Management Strategy is designed to incorporate new knowledge (or stakeholders, or Native Title claims) that arise during the life of the Project and to ensure that these matters are managed appropriately and in consultation with the relevant stakeholders.

Submission Number: H.1.1	**MANAGEMENT STRATEGIES** **Issue: The proponent's key environmental management strategies are not binding on the proponent.** ***Recommendation 1:*** *That the proponent's key environmental management strategies be made conditions of approval.*

Response:

The Joint Venture has adopted an adaptive management and outcome focused approach to environmental management to ensure continual improvement in environmental management and performance (PER page 5-6) over the life of the project. The principle behind adaptive management is a structured, iterative process of optimal decision making in the face of uncertainty, with the aim of reducing uncertainty over time by monitoring the outcomes of the management strategy, practices and procedures adopted. Like all effective management systems, the Project Integrated Management System will be expanded and enhanced over the life of the Project as new information becomes available or standards and expectations change.

The Joint Venture agrees with the EPAs position on outcome-based conditions (such as pre-defined impact limits) rather than the more traditional, prescriptive management technique-based conditions. The management strategies provided with the PER (Appendix series 3 of the PER) provide supporting information as to how the Joint Venture's proposed outcomes may be achieved but should not be considered a condition in themselves as they may require adaptation over the life of the Project. The conditions imposed on the Project should provide the Joint Venture with the flexibility to adopt and adapt new techniques and strategies that achieve the best environmental outcome.

Management/ Monitoring Strategies	
Submission Number: C.19	Processes for developing and maintaining long-term relationship between the Joint Venture and Traditional Owners, including through cross-cultural understandings and acceptance.
Submission Number: C.21	Compulsory cultural awareness training for all Joint Venture on site permanent staff, contractors, temporary and short-term staff for the life of the mine.
The Joint Venture agrees that for the long-term success of the Project and to ensure the protection of the region's environmental and heritage values it is critical to develop and maintain an open and respectful relationship with all stakeholders including Indigenous Stakeholders. To achieve this it is important that all Project employees and contractors have an understanding of cultural values and customs of the Indigenous people of the region. As indicated in the PER all employees and contractors will undertake cultural awareness sessions and records of completion are kept. This will occur over the life of the mine. Personnel at AngloGold's Sunrise Dam Gold Mine, within the Exploration team and Perth office already participate in cross-cultural training. See comments also under Heritage at C.11 – 20 below.	
Submission Number: H.2.1	**INDIRECT IMPACTS** **Issue: Areas that will be subject to indirect impacts require delineation and monitoring programs.** ***Recommendation 2:*** *That a buffer, in which flora and vegetation may decline to pre-defined limits, be delineated around areas approved for disturbance.* ***Recommendation 3:*** *That condition(s) are applied that stipulate trigger levels which specify the measurable level of decline/impact for flora and vegetation within the predetermined buffer area before contingency measures are applied to avert further decline/impact.* ***Recommendation 4:*** *That the proponent develops a monitoring program applicable to the buffer area. This program should also include reference sites, and provide for adaptive management where the measurable change has reached identified trigger levels.* ***Recommendation 5:*** *That a condition be developed that requires the proponent to report annually on the findings of the monitoring program.*
Response: Since the PER's public release, the Joint Venture has developed an Environmental Monitoring Strategy (Appendix 4) which compiles all monitoring requirements committed to in the PER documentation (including the Management Strategies). The Environmental Monitoring Strategy documents the triggers at which additional management measures above and beyond standard operating practice may be required. If the trigger values are reached during the life of the Project the Joint Venture will firstly undertake an investigation to determine whether the impact can be attributed to the Project (rather than to a factor outside of the Joint Venture's influence, such as a prolonged dry period). The Environmental Monitoring Strategy includes the provision of a monitoring protocol designed to assess the indirect impacts on flora and vegetation resulting from the Project. The proposed monitoring strategy will see the establishment of monitoring sites within a proposed 200 m buffer zone around the disturbance footprint within the Operational Area, and within 100 m of the disturbance footprint of the Mine Access Road and Water Supply Area. Reference monitoring sites will also be established to enable the Joint Venture to determine if changes in environmental values are attributable to the Project or natural variations. It should be possible to determine the success of the Joint Venture's management actions by comparing variables (such as species diversity, vegetation cover or foliage reflectance) between the reference and indirect impact sites. The Joint Venture proposes to establish a trigger that will indicate if management measures are not resulting in the desired outcome (environmental protection). The Joint Venture proposes that if monitoring at potential impact sites shows a 25% (or greater) deviation from the reference sites in more than one monitored parameter, the Joint Venture will investigate the cause. If the cause can be attributed to Project activities (rather than an environmental cause like sporadic rainfall), new management measures will be developed and implemented. Ideally, monitoring sites will be designed around the quadrats used in the baseline surveys that supported the PER, however this may not be possible in all cases. The Joint Venture anticipates that the results from this monitoring can be incorporated in to the standard annual environmental report submitted to the DMP and DEC.	

Management/ Monitoring Strategies	
Submission Number: I.1	A major concern for society members is that the infrastructure routes are well managed particularly with respect to clearing, fire management, feral plants and animals and rubbish dumping. It is noted in the PER the very low weed infestation that has been recorded across the area. Wildfires (probably from lightening) already have a significant impact on the area so fire management is important, both to see any prescribed burning is appropriate in scale and also that indiscriminate burning does not occur particularly along infrastructure routes. We look to these matters being addressed in operational practices and management plans. Both the plans and audits should be publicly available.

Response:

The Joint Venture agrees that the management of the Project Access Road is an important aspect for the Project. To demonstrate this, the Joint Venture has developed and released (PER Appendix series 3) a series of management strategies for the construction, operational and closure phases of the Project. All the strategies incorporate management actions specifically for the Access Road. To support the phase -based strategies, issue specific strategies have also been developed for protection of cultural heritage values and threatened species and community values. These strategies are all relevant to the Project's Access Road. These strategies include management measures for the control of weeds, feral animals, fire and rubbish associated with Project activities. To verify that the management measures adopted are effective the Joint Venture will be implementing a number of monitoring protocols as detailed in the Monitoring Strategy (Appendix 4). In the event that trigger values are passed the Joint Venture will investigate and adjust management practises if required.

To limit the impacts on the region as a result of improved access the Joint Venture has chosen to establish the Project Access Road as a private road. The Joint Venture may allow other users access to the road, where this occurs the road users will enter into an agreement which will include requirements to comply with the Project environmental controls for weeds, feral, off-track driving, rubbish and fire prevention.

To provide greater flexibility over the life of the Project the Joint Venture has chosen to develop management strategies rather than plans. These strategy documents focus on the environmental outcomes rather than the specific controls that will be adopted, this enables the Project to adapt as new information or practises are developed. This approach is consistent with the requirements of the Projects Integrated Management Systems which outlines the day to day management controls established via the site, workgroup or regions Operational Procedures.

The Joint Venture plans to maintain its open and transparent engagement strategy over the life of the Project, as such will ensure that the current and future versions of the strategy documents are made publically available. Results from site audits will be provided to the Project NGO reference group via the 2-yearly Public Environmental Report. Audit summaries will be made available to the wider community.

Submission Number: K.6	Please Note we are not against the mining proposal, but are very concerned over the long term repercussions of short term decisions that are frequently made because of inappropriate foresight being over ridden by promises of being able to manage the future and resolve these commitments during the final years of the mines life, and at a time when the existing owns may not even be involved in the project.

Response:

The Joint Venture is committed to managing its activities in an environmentally and socially responsible manner over the life of the Project. Central to the Joint Venture's commitment to proactive environmental management is the Project's Integrated Management System (IMS). As detailed in the PER, the IMS describes the management system elements that will guide the Joint Venture to achieve the Project's environmental and social objectives, targets and commitments through the implementation of management measures at all stages of the Project from construction to closure.

Key components of the Project IMS are the management strategies (Appendix series 3 of the PER) that provide the framework for identifying and managing environmental issues throughout Project life. The requirements of the strategies will be incorporated into the Project procedures and aim to demonstrate the Joint Venture's commitment to leading practice environmental management and continual improvement over the Project life. To ensure that the Project manages its activities and potential impacts progressively the Joint Venture is determined to obtain ISO14001, OHSASH 18001 and Cyanide Code certification. This certification will be undertaken by independent third party auditors and will require periodic audits over the life of the Project.

Management/ Monitoring Strategies	
The Conceptual Closure and Rehabilitation Strategy (Appendix 3G of the PER) will be updated over the life of the Project to ensure that it reflects the changes to the Project status, research outcomes and Stakeholder expectations. It is the intention of the Joint Venture to progressively rehabilitate the Project and to ensure that the rehabilitation outcomes are managed in accordance with agreed closure strategies rather than leaving the rehabilitation work to the final years of the Project. In the event that the Joint Venture does transfer responsibility to another party during the life of the Project that party will be bound by the conditions of the approval (or any amendment through the appropriate EP Act processes). Any deviation from the intended outcomes and the management commitments provided in the PER by the Joint Venture, or any subsequent operator, would have to be based on objectively reasonable criteria, with proper regards to due diligence and where appropriate seek amendment to the Projects approvals from the OEPA or DMP.	
Submission Number: H.4.4a	See Fauna below

Subsidiary Approvals and Compliance i.e. works approval	
Submission Number: D.1.1	**Water Quality** ***Drinking water*** To demonstrate that adequate treatment and control steps are in place for the proposed reverse osmosis plant, the proponent will need to address the following: • Compliance with the Australian Drinking Water Guidelines 2004. • Establishment of drinking water quality reporting procedures with Department of Health. • Establishment of a Drinking Water Quality Management Plan. • Minesites and Exploration Camps Drinking Water Quality Compliance Requirements. • Observing *Guidelines for the Bulk Cartage of Drinking Water* if potable water is to be transported around the extensive land holdings.
Response: The Joint Venture acknowledges its responsibility to provide safe drinking water to its employees and contractors. As this aspect is beyond the scope of the State and Federal Environmental Impact Assessment processes (as it is not directly related to impacts on 'the local or regional environment'), it need not be considered by the EPA. However, the Joint Venture will use these guidelines to form the basis for drinking water management, to influence the design and engineering and where applicable will be incorporate the requirements into the Project IMS.	
Submission Number: D.1.2	**Water Quality** ***Recycled water reuse (including grey water)*** The proposal refers to the reuse of recycled water for purposes such as dust suppression. The proponent should be made aware of and will need to address the following: • Alternate Water Supply Guidelines – Stormwater and Rainwater
Response: As this submission relates to occupational issues associated with Employees and Contractors which are covered by the WA *Mine Safety and Inspection Act* it may be outside the scope of the Environmental Impact Assessment processes and need not be considered by the EPA. The Joint Venture understands that the re-use of waste water in WA is predominately managed via the DoH *Alternate Water Supply Guidelines – Stormwater and Rainwater and DRAFT Guidelines for the Use of Recycled Water in Western Australia*. However, the *Alternate Water Supply Guidelines – Stormwater and Rainwater* specifically exclude mining activities and instead the most relevant document actually appears to be the *DRAFT Guidelines for the Use of Recycled Water in Western Australia* (April 2009). The Joint Venture agrees with the overall objective of the Draft Guideline, which is "to maximise the reuse of recycled water through minimising and managing any risks associated with its use" (e.g. risks to public health and to the environment). The draft guideline allows for the use of recycled water as process water, as well as in fire control and a variety of other uses provided the water meets the established water quality requirements. The Joint Venture is incorporating these requirements into the design of the Project.	
Submission Number: D.1.3	**Water Quality** ***Wastewater disposal*** • Although the Public Environmental Review (PER) has not discussed how sewage will be collected, treated or disposed of, the proponent must ensure that all onsite wastewater disposal systems must conform to the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*. Systems for onsite wastewater disposal must be approved by the Executive Director, Public Health. • Appropriate design and maintenance of sewage treatment plants is essential to prevent the breeding of nuisance and disease vector mosquitoes. The capacity of

Subsidiary Approvals and Compliance i.e. works approval	
	the plant or lagoons must be sufficient to allow for wet season rainfall, in order to prevent overflows and subsequent mosquito breeding. The use of recycled wastewater for irrigation of vegetation must be done in such a way that it does not allow pooling and subsequent mosquito breeding. • It is noted that there will be an upgrade of the exploration camp from 60 to 100 beds and the other construction camps will also fluctuate in staff numbers. Wastewater Treatment Plants and effluent disposal areas need to be designed to accommodate changes in flows and biological loadings. Any existing plant size upgrades or disposal field changes will require additional approvals. • As the use of en-suite units may lead to higher wastewater flows, this should taken into account in the sizing of the wastewater treatment plant and effluent disposal systems. • Provision needs to be made for the appropriate disposal of sludge from the wastewater treatment plant. It should be noted that landfill sites approved for general refuse from the accommodation village may not be suitable for this purpose.
Submission Number: F.3.1	**Emissions and Discharges** **Category 54: Sewage Facility** <u>Capacity</u> • During construction there is estimated to be up to 700 personnel, during operation there is estimated to be up to 450 personnel, presumably therefore exceeding the capacity limit of 100 cubic meters for a registered sewage facility (category 85) and the facility will therefore need to be included on any future works approval or licenses. Has a new facility been considered for the site or what is the capacity of the existing facility for the exploration camp and will this be suitable? • Where will the facility be constructed? Has sensitive receptors such as priority flora and fauna and village residents been considered? <u>Increased nutrient levels</u> • Grey water will be recycled. Effluent associated with treated water will be fed into the process water. Will all WWTP water be recycled in this way or will any be irrigated, including where to? • Will the plant include evaporation ponds? If so how will these be designed and monitored and where will they be located? • The DEC will also need confirmation of the following; o How will pipelines be monitored? o How will nutrient levels be monitored? o How will weeds due to irrigation be monitored? o How and where will solids be disposed?

Response:

It is recognised that wastewater management can have an impact on the environment and poses a risk to humans when poorly managed, as such the Joint Venture will be designing and installing wastewater treatment facilities that comply with all applicable regulations, building requirements and standards as indicated by submission D.1.3 and F.3.1. As indicated by the above submissions wastewater disposal is covered by existing legislation and can be effectively managed via these processes and does not require consideration by the EPA.

While not necessarily a consideration for the EIA process it is acknowledged that the size and number of employees and contractors envisaged during construction and operation, the wastewater treatment system proposed (including any upgrade of the existing system) will trigger the requirements of a Works Approval and Licence under the *Environmental Protection Act* and approval from the Executive Director of Public Health and the Shire of Menzies Environmental Health requirements.

The detailed designs for wastewater treatment systems for the Project are currently being evaluated and developed and include different types of wastewater systems such as anaerobic treatment units (ATU), grey water reuse systems and disposal

Subsidiary Approvals and Compliance i.e. works approval	
options such as sub-surface irrigation and evaporation ponds. The design will be in accordance with DEC and DoH standards and will be monitored in accordance with DEC Licence Conditions and requirements of the DoH. As part of the Works Approval application the DEC will be provided with full detail on the wastewater treatment system such as pipelines locations, management strategies for nutrients, weeds, surplus waste water and bio-solids disposal along with monitoring programs. The Works Approval application will be submitted to the DEC within the next 18-months along with an application for an effluent system > 540 L/day submitted to the DoH (via the Shire of Menzies). Both approvals are required prior to construction of the facility.	
Submission Number: D.2.2	**Environmental Health Hazards** ***Accommodation*** • The proposal includes the provision of on site accommodation. There should be evidence that the necessary Local Government approvals have or will be obtained to ensure compliance with the requirements of various regulations, health local laws and standards, designed to ensure that dwellings promote good health for all occupants.
Response: All applicable approvals from the Local Government (Shire of Menzies) will be obtained as required. It is anticipated that such approvals will be obtained following the completion of the State and Federal EIA process and prior to construction over the next two years. The Joint Venture has had regular meetings with the Shire of Menzies since the inception of the Project and plans to continue open communication over the life of the Project. This approach will ensure that all applicable approvals are obtained. The Joint Venture agrees that the aspects discussed in Submission D.2.2 are important although not within the scope of the State and Federal EIA process and need not be considered by the EPA.	
Submission Number: F.4.1	**Category 89: Landfill Facility** <u>Type and Capacity</u> • The type and capacity (i.e. presumably a size increase to the current landfill will be required) of all future landfills on site need to be considered to determine the category and if works approvals and licensing will be required. • If new sites are to be proposed where will these be located? <u>Associated impacts</u> • The project landfill site will be in accordance with the *Environmental Protection (Rural Landfill) Regulations 2002*. Internal audits will also be conducted. • How will feral animals or animals taking advantage of disposed waste be controlled?
Response: The site currently has an approved landfill to cater for the exploration related requirements. The exploration facility is located within the proposed waste landform footprint and will need to be upgraded or replaced within the first few years of the Project. The landfill facility for the mine has not been designed in detail at this stage of the Project. It is acknowledged that the landfill will require a Works Approval and Licence from the DEC. The Works Approval application will contain details on the proposed location, management measures associated with animals, windblown rubbish and monitoring requirements. It is understood that an assessment of the possible environmental and health aspects associated with the facility will also occur via this process and all relevant information will be provided to the DEC to facilitate this process. The landfill will be located, designed and constructed in accordance with the *Environmental Protection (Rural Landfill) Regulations 2002* and any condition associated with the Works Approval and/or Licence. The Operational Environment Management Strategy (PER Appendix 3C) and Environmental Monitoring Strategy (Appendix 4 of this document) provide details on strategies and monitoring that will be undertaken to prevent adverse environmental impact. The requirements provided in the strategies are anticipated to be similar to requirements required by the Works Approval and Licence Conditions. It is understood that DEC may occasionally audit the facility. The non-recyclable waste generated onsite will be buried and covered in accordance with *Environmental Protection (Rural Landfill) Regulations 2002*. The Onsite Invasive Flora and Fauna Control Management Strategy in the Operational Environmental Management Strategy outlines the Joint Venture's proposed strategies to managing feral animal access to the landfill facility.	

Subsidiary Approvals and Compliance i.e. works approval	
Submission Number: F.5.1b	**Category 6: Mine dewatering** Pit dewatering DEC would like information on how this pipeline will be monitored at works approval and licensing stage?
Response: The Environmental Monitoring Strategy (Appendix 4) developed by the Joint Venture details monitoring requirements for Project infrastructure, including the requirement for inspection and monitoring of the pipeline. The Joint Venture will provide the DEC with further information regarding monitoring protocols as part of the Works Approvals application. In board terms the pipeline monitoring will comprise a combination of visual inspections of bunds and surface pipes and real-time leak detection systems.	
Submission Number: D.2.1, D.2.3	**Response:** See Public/ Personnel Health below
Submission Number: F.2.1	**Response:** See Air Quality below
Submission Number: F.6.1	**Response:** See Pollution below
Submission Number: G.2	**Response:** See Closure below
Submission Number: I.3	**Response:** See Rehabilitation below

Management Commitments and Offsets	
Formal	
Submission Number: C.8	Best practice environmental outcomes for the area.
Response: The Joint Venture agrees that the adoption of best / leading practice techniques should be undertaken at every reasonable opportunity to ensure that lasting significant impacts to biodiversity or ecological function do not occur. This is in line with EPA Guidance Statement No 55 *Implementing Best Practice in proposals submitted to the Environmental Impact Assessment process*. The Joint Venture has endeavoured to incorporate lead practice strategies and management measures into the Project to fulfil the EPA requirements. The PER describes the management techniques employed; these range from avoidance of impact, followed by mitigation, rehabilitation and finally offsets. The conservation of biological diversity and ecological integrity has been a fundamental consideration in the design and proposed management of the Project (in line with EPA Position Statement 7 *Principles of Environmental Protection*).	
Submission Number: C.10	Open and transparent environmental processes, including provision of all relevant documentation relating to environmental processes, and consultation with and advice from Traditional Owners about environmental matters.
The Joint Venture agrees with the philosophy of open and transparent engagement with all stakeholders including NGO's and Indigenous Communities/stakeholders. The Joint Venture operates within the State and Federal Government environmental impact assessment processes for the Project (via the Public Environmental Review) to ensure an open and transparent process. The Joint Venture referred the Project to the EPA (and DEWHA) in the first half of 2008 and received no appeals against the PER level of assessment set by the EPA. The Joint Venture then designed the Project and its associated PER documentation, based on surveys and study reports as agreed with the State and Federal environmental agencies and as described in the Project Environmental Scoping Document (PER Appendix 4). The PER and reports are publicly available via the Project's website (*www.tropicanajv.com.au*), with the website details widely communicated via stakeholder briefings and consultations. Prior to the establishment of the website and release of the baseline survey reports the Joint Venture regularly met with a range of stakeholders, including Indigenous Stakeholders, Community members and Environmental NGO's to communicate the results of the baseline surveys and to discuss how this information was being considered by the Joint Venture. A summary of these engagement events was provided in Table 4.1 of the PER and in Figure 6.7. The Joint Venture plans to continue its engagement strategy adopted before and during the EIA process, throughout the life of the Project. The Joint Venture has initiated the establishment of an Indigenous Reference Group which will provide opportunities for the Indigenous community to comment on the site environmental planning and management over the life of the Project. The Joint Venture also plans to provide the Community with a 2-yearly Public Environmental Report which will summarise environmental studies, monitoring, stakeholder engagement activities, and management measures and will detail the future direction of the Project.	
Submission Number: C.13	See Indigenous Heritage below.
Submission Number: H.5.1	**Issue: The proposed residual impacts on priority flora are significant.** ***Recommendation 15:*** *That the proponent mitigates or offsets the residual impacts on priority flora.* ***Recommendation 16:*** *That the basis for extrapolations to estimate impacts on priority flora be provided to DEC for review and comment.* **Discussion** The proposal presents significant residual impacts on the following priority flora: • *Acacia eremophila* variant (priority 3, 11.7 per cent). • *Acacia eremophila* var. *variabilis* (priority 3, 4.9 per cent). • *Daviesia purpureascens* (priority 4, 94.0 per cent of local population). • *Dicrastylis cundeeleensis* (priority 3, 46.5 per cent). • *Eucalyptus pimpiniana* (priority 3, 9.5 per cent). *Lechenaultia divericata* is a new record for Western Australia and the only record within

Management Commitments and Offsets	
	the Great Victoria Desert. This species is proposed for inclusion in the priority flora list (PER, page 6-30) and any impact on this species is considered significant. The calculated "per cent" impact includes population extrapolations by the proponent. DEC has been unable to confirm the number of populations that will be impacted by the proposal as geographic information systems data have not been provided. The proponent has, however, committed to providing these extrapolations to DEC.

Response:

Discussion of the extrapolation methodology is provided in Section 6.3 of this document.

The Joint Venture has adopted the EPAs preferred hierarchical approach to environmental management with priority being placed on the avoidance and minimisation of potential impacts to biological values such as flora of conservation interest. Section 2.5 of this document summarises some of the activities that the Joint Venture has adopted to avoid and mitigate its potential impacts. Further information can be found in the PER. For example, infrastructure has been located to avoid DRF and minimise impacts to sensitive landforms (e.g. sand dunes). Where avoidance and minimisation are not possible rectification and remediation measures have been adopted.

Since the finalisation of the PER, the Joint Venture has identified additional populations of a number of Priority species (Appendix 3B and 3C), and has been able to assist the DEC Threatened Species and Communities Branch down-grade and de-listed several Priority species initially identified in the PER. (Section 5.1 and Appendices 3A and 3B contain further information). As a result of the additional data collected since the completion of the PER, MBS was commissioned to re-estimate percentage impact on the remaining Priority Species. Re-assessment of impacts has seen the overall impact on the Priority flora highlighted by DEC reduced. The revised percentage impacts for the key Priority flora are:

- *Acacia eremophila* numerous nerved variant (P3) 10.03% (previously 11.72%);
- *Acacia eremophila* var. *variabilis* (P3) 4.90% (no change to impact);
- *Eucalyptus pimpiniana* (P3) 9.27% (previously 9.53%);
- *Dicrastylis cundeeleensis* (P4) 26.79% (previously P3 with a predicted impact of 46.5%); and,
- *Daviesia purpurascens* (P4) 2.37% (98 populations identified, 1 of which may be effectively removed by the Project).

The Joint Venture will seek to include priority species in the revegetation program as part of the mitigation strategy. The percentage impacts described represent a worst case scenario, resulting from full development of the Project and an inability return these species to the revegetation area. As the environmentally worst case scenario could be considered a significant residual impact, the impacts constitute an aspect to be considered in formulation of the offsets package for the Project. The offsets approach (as discussed in Chapter 13 of the PER, Section 2.5 and Appendix 5 of this document) aims to increase the knowledge of conservation and biodiversity values in the region so that appropriate management measures can be developed and implemented. The results of the work undertaken via the Project's proposed offset package are likely to result in status changes to some listed or Priority species, as has already resulted from the baseline surveys completed by the Joint Venture. The proposed offset package includes a performance link the Joint Venture's rehabilitation program which is intended to promote the use of mitigation strategies in preference to offsets (EPA 2006, 2008b).

The context of the reference to *Lechenaultia divaricata* being identified in surveys for the Tropicana Gold Project is incorrect (PER page 6-30). The species had previously been recorded by *ecologia* in a survey completed for the Tropicana JV adjacent to the Plumridge Lakes Nature Reserve in 2005. While *Lechenaultia divaricata* is know from the wider region, it has not observed during any of the Project baseline surveys.

Submission Number: H.6.1	**Issue: The impacts on vegetation communities at a local scale are significant.** ***Recommendation 17:*** *That the proponent commits to not exceeding the stated limits of disturbance on vegetation communities S8, ExL.t2H and S4.* **Discussion** The proponent presents significant impacts on the following vegetation communities: • S8 Low shrubland of *Acacia desertorium* var. *desertorum* with *Grevillea juncifolia*, low myrtaceous shrubs and mixed low shrubs with occasional emergent *Eucalyptus youngiana* and Eucalyptus spp. vegetation community within the PEC (9.7 per cent). • ExL.t2H mixed Eucalypt woodlands over mixed open shrubs and *Triodia basedowii* (7.6 per cent).

Management Commitments and Offsets	
	• S4 open heath of *Melaleuca hamata* over *Aluta maisonneuvei* subsp. *auriculata* with *Grevillea auriculata* vegetation community (14.0 per cent).

Response:

The Joint Venture acknowledges that the clearing of up to 3,440 ha may constitute a significant local impact to some vegetation communities, but only at the local scale. The Joint Venture has used its best endeavours to limit the direct impacts and residual impacts to significant assets by optimising the layout of the Project to minimise lasting environmental impacts (e.g. in the design of waste dumps, the layout of the plant site, the design of roads) and by avoiding impacts to sensitive areas such as the Western Dunefield.

Community S4 on the Pinjin corridor was identified as being of conservation interest by the Joint Venture due to its apparent restricted distribution in a single location in the surveyed corridor. It has not been identified as a PEC. Since the compilation of the PER, the Joint Venture has obtained higher quality imagery over the area, thereby enabling more accurate mapping of vegetation boundaries. Examination of the new imagery has enabled the Joint Venture to refine the boundary of this community, including an area to the south of the mapped corridor (Figure 4.1). Figure 4.1 indicates that the S4 community extends to the south of the mapped boundary (as well as a small extension to the northwest), thereby increasing its current known extent, and decreasing the percentage impact. Additional mapping in the area would be likely to identify more areas of this community than have currently been ground-truthed.

The "mixed Eucalypt woodlands over mixed open shrubs and *Triodia basedowii*" is not identified as a PEC, is widespread in the region, and is not the principle or only habitat of threatened species in the area. Figure 4.2 demonstrates that this community is widespread with over 30,000 hectares mapped in the baseline surveys for the PER. It is likely that the community is considerably more widespread and Figure 4.2 suggests as the community appears to extend beyond the northeast and southwest boundaries of the mapped area. In addition, connectivity of the community is maintained around the eastern, southern and western sides of the mining area. It is not clear what benefit would be obtained from a limit on the clearing of this vegetation community, particularly if it resulted in greater impacts to less prevalent communities or areas of higher conservation value.

Vegetation community S8 occurs in two sections of the Pinjin corridor. In the PER, the Joint Venture considered, conservatively, that there is some floristic similarity between S8 and the "Yellow sandplain communities of the Great Victoria Desert" PEC. This PEC is listed as a Priority 3(ii) PEC which are defined as "Poorly known ecological communities... known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat". As such, the DEC does not consider P3(ii) communities to be at risk. The PEC has not been formally floristically or geographically described by DEC and the assertion that S8 forms, or does not form, part of the PEC cannot be definitively asserted at this point in time. Community S8 exists on an atypical substrate to the PEC (yellow to yellow-orange sandy loams on flats and lower slopes, rather than yellow sandplains; PER Appendix 2-C5, thus is not a typical representation of the PEC. This is especially the case when S8 is compared to the more typical community 'Low Open Shrubland of *Calothamnus gilesii*, *Persoonia pertinax* and mixed low shrubs with occasional emergent *Eucalyptus youngiana* and *Eucalyptus gongylocarpa* on yellow sands flats on undulating sandplains'.

In each of the above three cases the inclusion of a condition limiting clearing of the listed vegetation communities is of questionable merit. The Joint Venture will use its best endeavours to only undertake the clearing that is required to provide a safety working environment and aim to re-establish an ecosystem that is similar to the preclearing landscape during rehabilitation.

Submission Number: H.8.1	**Issue: Offsets discussions between DEC and the proponent are outstanding.** ***Recommendation 19:*** *That the DEC is afforded an opportunity to advise the EPA on the outcome of the offset discussions, which are expected to be held subsequently to this submission.* **Discussion** The proponent has arranged a meeting regarding the offset proposal with DEC subsequent to this submission. Following this meeting, DEC will be able to provide advice to the EPA on the proponent's offset proposal.

Response:

The Joint Venture has undertaken offset discussions with DEC, DEWHA and other government departments to progress the structure and content of the proposed Biodiversity and Greenhouse Offsets put forward in the PER. Discussions are ongoing.

Management Commitments and Offsets	
Submission Number: I.4	The Society has concerns about offsets and particularly those involving money provided by proponents. It is not clear what the financial component of the offset will be however we believe there is a real possibility that the State Government Department of Treasury will be taking a close look at non Consolidated Revenue Funding received or managed by government agencies and particularly the DEC. The likely consequence is that CRF funding to the DEC will be reduced by the amount received by any offset or similar arrangement. It is obvious if this happens there will be no net benefit to conservation and we would probably argue there never was going to be anyway. This is particularly the case when impacts on biodiversity values are involved.

Response:

The Joint Venture acknowledges the comments put forward by the Society and supports the proposition that funding provided through offsets should be managed transparently and independently of the budgets of government departments and agencies.

As described in Appendix 5, the Joint Venture proposes to develop a Trust (or similar financial structure) to offset residual impacts to significant biological assets in the GVD. This Trust would not be a direct contributor to the DEC, rather an independent funding body administered by a Review Panel (Joint Venture representatives, State and Federal governments and community representation) and advised by technical panels (one for biodiversity and one for greenhouse) composed of academic advisors (university representatives), leading research agencies (e.g. BGPA or the Museum of Western Australia) Indigenous representation (e.g. native title claimant group) and others. It is recognised that the DEC may in some cases be the best organisation to undertake aspects of the Trust objectives including research activities and conservation measures, particularly within the State's conservation estate.

Legend

- Survey Boundary
- Proposed Disturbance Footprint
- S4 Original Extent (6.7 ha)
- S4 Total Extent Based on Improved Imagery

NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- AERIAL PHOTOGRAPHY SOURCED FROM ANGLOGOLD ASHANTI 2007
- LOCALITY MAP SOURCED FROM LANDGATE 2008

SCALE

0 20 40 80 120

Meters

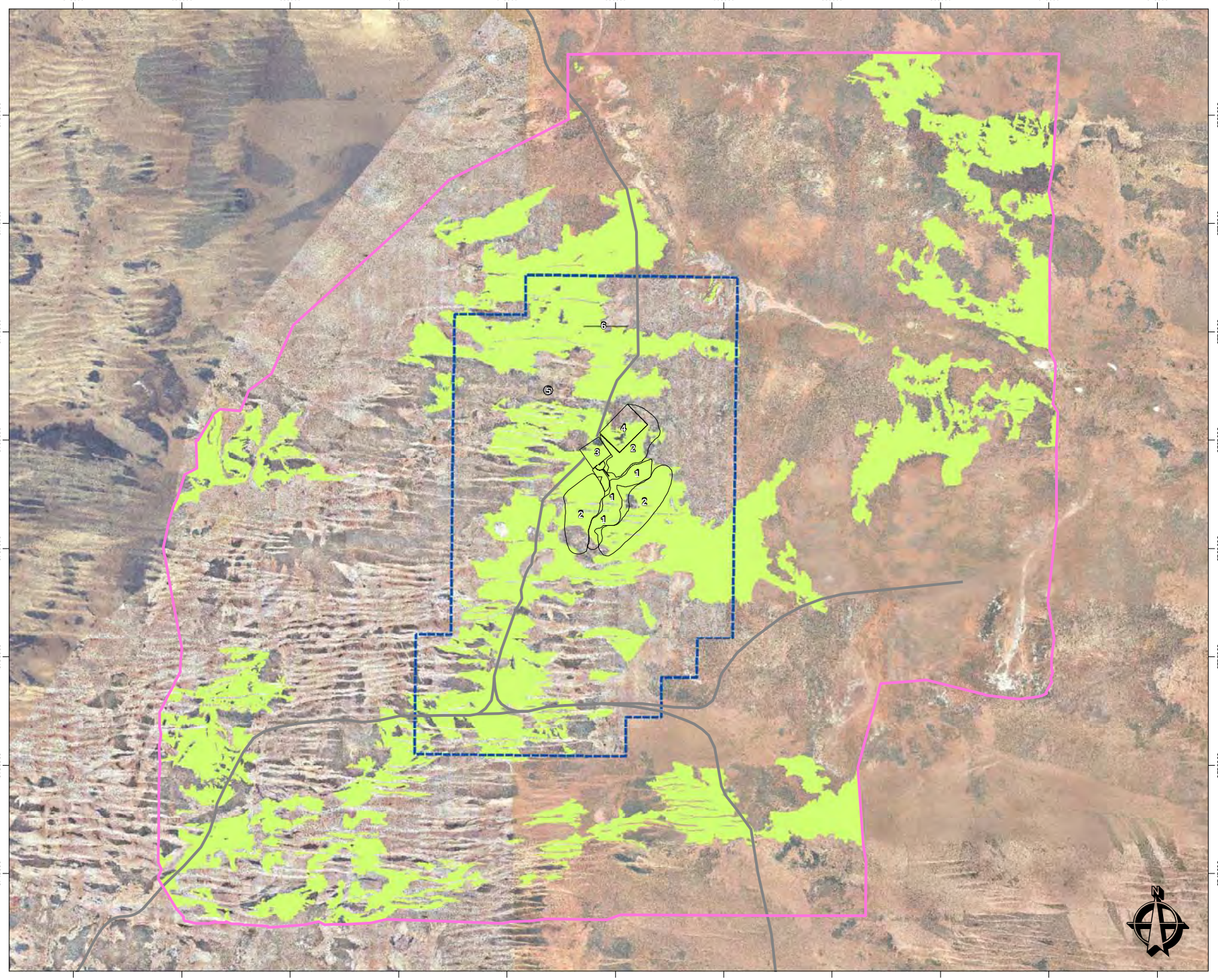
LOCALITY MAP

METADATA RECORDED	PROJECTION
100%	MGA ZONE 51
HORIZONTAL DATUM	**HEIGHT DATUM**
GDA 94	N/A

CREATED BY	CHECKED BY	APPROVED
GWa	BP	FD
DATE	**REVISION**	**DRAWING NO.**
17.02.10	0	351-2.09e

Tropicana Joint Venture
TROPICANA GOLD PROJECT

Response to Submissions
S4 Vegetation Unit of the Pinjin Infrastructure Corridor
Figure 4.1



Legend

- Survey Boundary
- Proposed Infrastructure Corridor
- **Conceptual Site Layout**
  - 1: Resource Area
  - 2: Waste Material Landforms
  - 3: Processing Area
  - 4: Tailings Storage Facility (TSF)
  - 5: Village
  - 6: Airstrip
- Operational Area
- ex.Lt2H Vegetation Community

Refer to page 6-26 for vegetation description

Imagery is a composite of aerial and satellite photography

NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2007
- LOCALITY MAP SOURCED FROM ANGLOGOLD ASHANTI 2008

SCALE

0 1 2 4 6

Kilometers

LOCALITY MAP

METADATA RECORDED	PROJECTION
100%	MGA ZONE 51
HORIZONTAL DATUM	**HEIGHT DATUM**
GDA 94	N/A

CREATED BY	CHECKED BY	APPROVED
GWa	BP	FD
DATE	**REVISION**	**DRAWING NO.**
19.02.10	0	351-2.05

Tropicana Joint Venture
TROPICANA GOLD PROJECT

Response to Submissions
Distribution of Mixed Eucalypt Woodland
Figure 4.2

4.2. SOCIAL

Indigenous Heritage	
Formal	
Submission Number: E.2	Reports of the ethnographic and archaeological surveys conducted for the projects have not been submitted to the DIA but Tropicana Joint Venture have commissioned and submitted consolidation reports with the Document. In addition they have provided Site Recording Forms for Aboriginal heritage sites identified in their project areas in accordance with Section 15 of the AHA.
Submission Number: E.3	As stated in the Document, Tropicana Joint Venture has commenced consultation with the Native Title Claimants and Heritage Custodians through the Central Desert Native Title Service to conduct ongoing ethnographic consultants. Tropicana Joint Venture have acknowledged that all of the Aboriginal people who may have a cultural association with the region have not yet participated in ethnographic consultations regarding the project, and are committed to conducting further work in the region to cover the relevant tenure.
Submission Number: E.4	It is my opinion that the project can be managed to protect the cultural heritage values of the project area if the Proponent observes the following commitments made in the Document: 1) The conduct of Heritage Surveys for all relevant areas; 2) The ongoing consultation with all relevant Aboriginal people such as Native Title Claimants, Heritage Custodians and all those with cultural associations with the area; 3) The avoidance of impact to Aboriginal heritage sites in accordance with the AHA; 4) The implementation of the Heritage Management Strategy in conjunction with the DIA and the relevant Aboriginal people.
Response: The Joint Venture is working with the DIA to provide copies of any outstanding standing archaeological or ethnographic reports. In addition, the Joint Venture (in collaboration with the CDNTS) has commissioned supplementary ethnographic surveys. Reports from this work will be provided to DIA. The Joint Venture acknowledges DIAs endorsement that the Project can be managed to adequately address the potential concerns and points of interest of the DIA through its management strategies, as described in the PER. The Joint Venture undertakes to continue working with the Department, heritage custodians, future Native Title Claimants and Indigenous people as the Project progresses.	
Submission Number: E.1	See Stakeholder Engagement above
Submission Number: C.3	All heritage identification and protection matters to be undertaken on the basis of the private native title right to maintain and protect cultural heritage including the right to maintain and protect sites of significance. Thus the primary source of heritage matters is facilitated though the Native Title Act 1993. All cultural heritage protection is based on the knowledge stemming from the native title holders and Traditional Owners of the area.
Submission Number: C.5	The Joint Venture's draft Heritage Management Strategy be re-written in consultation with Traditional Owners following the development and implementation of the Heritage Management Plan.
Submission Number: C.6	A Heritage Management Plan between the Joint Venture and the Traditional Owners to be developed providing a clear understanding of cultural heritage requirements as advised by the native title holders. The Heritage Management Plan will give the Joint Venture direction as to how areas of cultural significance and/ or sensitivity are to be managed in conjunction with mining activities.

Indigenous Heritage	
Submission Number: C.7	On-going consultations with Traditional Owners in regards to heritage matters. This relationship between parties to be cultivated though the implementation of the Heritage Management Plan over time.

Response:

Within WA, the identification and protection of any Archaeological and Ethnographic Heritage sites is managed via State and Federal legislation. To meet its obligations under these Acts the Joint Venture has ensured that archaeological surveys over the proposed Project area have been systematically undertaken to the required standards as specified by the DIA and Environmental Protection Authority guidelines. All Ethnographic surveys were undertaken by the Wongatha Heritage Management Team and completed in accordance with the Goldfields Standard Heritage Agreement protocols which were relevant for the region at that time.

Extensive archaeological surveys undertaken on behalf of the Joint Venture have resulted in the identification of a number of previously unrecorded artefact sites. As documented in the PER, none of these archaeological sites are impacted by the Project and in some situations the Project footprint has been redesigned to avoid impacts to sites.

No ethnographic sites have been identified within the Project footprint during surveys or through regular contacts with Indigenous communities in the Goldfields. It is recognised that members of Indigenous communities who are the recognised Traditional Owners of neighbouring areas may possess heritage knowledge over the Project area. Attempts have been made by the Joint Venture to extend consultation to other Indigenous communities and to include individuals who may have cultural knowledge over the area and who may or may not be participants to Wongatha or possible future Native Title claims over the Project area. The Joint Venture has sought to progress extended heritage consultations since 2008, and is continuing to advance this matter in consultation with CDNTS.

In the event that new cultural heritage information is forthcoming over the life of the Project, the Heritage Management Strategy, together with observance of the WA *Aboriginal Heritage Act*, provides due process and procedure to accommodate any recommended protection, preservation or mitigation of unavoidable impacts on heritage values.

The Joint Venture acknowledges that a clearly defined group of Traditional Owners may come forward in the future, either resulting from the ongoing consultations with key stakeholders for the Project, or as part of a Native Title Claim. If this eventuates, the Joint Venture anticipates that a specific Heritage Management Plan would be developed in conjunction with the Indigenous Reference Group and Traditional Owners (and representative groups such as CDNTS). This Plan would be developed as a specific management tool to address any particular heritage concerns of the Traditional Owners that are not adequately addressed in the Heritage Management Strategy (as contained in Appendix 3F of the PER). Following the development of the Heritage Management Plan, the Heritage Management Strategy would be reviewed in consultation and updated to ensure that operational management of heritage issues meet the requirements of the Plan.

The Heritage Management Strategy has been developed on the principle of adaptive management, subject to modification as new information becomes available. Open and inclusive consultation will remain a key part of the Project's philosophy, thereby supporting the current Heritage management approach. Prior to its inclusion in the PER, the Strategy was circulated for comment and input from DIA, GLSC, NEIB and the CDNTS.

Submission Number: C.4	Ethnographic and archaeological heritage surveys to be conducted over the Project Area by Traditional Owners who hold appropriate knowledge of laws and customs in the area. The Project Area to be surveyed with the aim of identifying all cultural heritage information in sufficient detail to inform a long term Heritage Management Plan (That is the appropriate methodology for mining activities). In circumstances of cultural sensitivity certain privacy arrangements may also attach to that information.

Response:

As discussed above, all surveys completed for the Project have been undertaken in accordance with the DIA requirements and the Goldfields Standard Heritage Agreement. Fourteen Indigenous representatives (including men and women) from the Wongatha Heritage Team were employed over the duration of the ethnographic surveys. The Indigenous representatives involved in the surveys represented connections extending across the entire Wongatha region including family ties to members resident in the more remote desert communities. While Indigenous representatives were not directly involved in the archaeological surveys, all substantive and numerous less substantive archaeological sites recorded in the surveys were visited during ethnographic surveys with the aim of identifying cultural significance.

The information collected during these surveys has been considered during the design of the Project and has influenced the content of the Heritage Management Strategy released with the PER (Appendix 3F).

Indigenous Heritage	
As stated above these surveys were carried out working with the recognised Native Title body within the agreed processes and with the Wongatha Heritage Management Team which was the recognised survey team in the period from 2002 to 2009. In December 2009, a new consultation plan was developed between CDNTS and the Joint Venture. One outcome has been that the Joint Venture and CDNTS have jointly appointed an independent Anthropologist to carry out further research and interviews for the purpose of identifying Indigenous community members who may hold heritage information over the East Wongatha area, in particular over the proposed Project footprint to supplement the work completed thus far. This approach is consistent with the Project's Heritage Management Strategy. The Joint Venture acknowledges that information collected during future discussions and surveys may identify areas of cultural significance. This information will be managed in accordance with the requirements of the *Aboriginal Heritage Act*. The Joint Venture also recognises that a partnership approach between DIA, CDNTS and Indigenous communities will ensure the protection of cultural and heritage sites within the broad Joint Venture Area.	
Submission Number: C.9	Incorporation of an Indigenous cultural context into environmental planning and management around mine.
Response: The Joint Venture agrees that opportunities should be investigated to incorporate where practical, cultural knowledge (along with other stakeholder interests) into the Environmental planning and management for the Project, however, it is not a specific requirement of the EIA process. Thus far the Joint Venture has provided opportunities through a number of forums for the community to ask questions, raise concerns and to make suggestions and comments about the Environmental Planning aspects of the Project. These include but are not limited to open community meetings, regular discussions with GLSC, NEIB, CDNTS and Indigenous Communities in the Goldfields, the establishment of the Joint Venture website and a Project specific contact number. Comments and feedback obtained through these and other forums have been considered and have influenced the Project proposed. The Joint Venture plans to continue its consultation with all interested stakeholders and is working to establish an Indigenous Reference Group. As indicated earlier this group along with other stakeholders such as Government and NGO groups will be provided with opportunities to comment on the Project's environmental management practices. In addition, the Joint Venture anticipates that the scope of the proposed offset package for the Project will facilitate opportunities to better understand the zoological, botanical and cultural aspects of the GVD in consultation with Indigenous Communities.	
Submission Number: K.7	See Groundwater below

Visual Landscape and Amenity	
Formal	
Submission Number: K.5	See Closure below

Recreation and Tourism	
Formal	
Submission Number: H.1.1	See Management Strategies above

Public/ Personnel Safety and Health	
Formal	

Submission Number: D.2.1	**Environmental Health Hazards**
	Air quality
	• Typically with operations of this type and scale the biggest concern is dust impact on close by communities. The distance of the site to the nearest permanent regional town and individual residence ensures that dust from this development should not present a health issue. However, given the location of the accommodation village dust suppression measures should be employed to reduce amenity impacts and potential short-term respiratory effects at the village. The dust monitoring plan should include validation of the modelling which predicts that NEPM PM_{10} will be met at the village location.
	• The dust management plan should include monitoring of air emissions during activities that may affect sensitive premises (i.e. the village) both during the construction and operation phases of the project. The dust management plan should incorporate adaptive management practices to respond proactively to conditions likely to generate dust.
	• The following should be noted and/ or clarified:
	  • *Land development sites and impacts on air quality* (DEP 1996) refers to 'The existing DEP limit for the maximum allowed level of dust concentration in the atmosphere is 1000 micrograms per cubic meter of air , measured over 15 minutes' and not 1000 **mg/m^3** as appears in the PER (p7-11).
	  ▪ This level (1000 **µg/m^3**) is not to be exceeded beyond the boundary of the premises and generally does not apply to road or rail corridors; also
	  ▪ the Department of Health does not consider dust visibility an acceptable monitoring method. Dust visibility alone should not be relied upon as a measure of PM_{10} exceedances or where boundary dust has the potential to affect sensitive receptors.
	  • The Mine Safety & Inspection Act 1978 and 1994 are cited in Appendix 2-B1 on p38 & p48 respectively as providing appropriate guidance for managing dust containing fibrous material. Given that 360 Environmental have identified potential health effects from Fibrous minerals to workers-
	  ▪ TJV should clarify whether both Acts apply; and
	  ▪ the sections under the Act or Acts relevant to the management of airborne dust containing fibrous material; or
	  ▪ define the 'acceptable' levels referred to in the management of fibrous materials on page 48.

Response: Dust management strategies are outlined in the Construction Environmental Management Strategy and the Operation Environmental Management Strategy (PER Appendices 3B and 3C). Further instructions regarding dust emissions will be developed as the Project progresses toward construction through the development of internal procedures. Dust monitoring will include both personnel monitoring for potential exposure and the installation of mechanical dust monitoring stations; therefore dust will not be monitored on visibility alone. The monitoring stations will be located on the premises boundary and at the village. The statutes cited in Appendix 2- B1 require the following correction: • *Mines Safety and Inspection Act 1994* (MSI Act) • *Mining Act 1978.* Both statutes and the subsidiary Regulations will apply to the Project. Specifically, control of dust and atmospheric contaminants is regulated under Part 9 - *Mines Safety and Inspection Regulations 1995* (subsidiary legislation to the MSI Act).	

Public/ Personnel Safety and Health	
The Joint Venture has engaged an external organisation to undertake further assessment of the potential Fibrous Minerals. This work will be completed prior to the commencement of the Project and where appropriate specific engineering controls will be incorporated in to the site. Results from this review suggested that the fibrous mineral occurrences within the Project are very low and less of a management challenge than in many WA mining operations.	
Submission Number: D.2.3	***Pesticide Use and Safety*** • There are general requirements for all of proponents such as AngloGold Ashanti – Tropicana Gold Project to control pests (weeds, vermin, vectors, feral animals etc) on the site. Similar to our previous comments to the original proposal it is expected that any treatment and application of pesticides must be applied in accordance with the *Health (Pesticides) Regulations 1956*. In addition, contractors/ persons who are applying the pesticides for reward must be appropriately trained and hold a current Pesticide License and be employed by a Registered Commercial Pest Firm. However, if the proponent/ company wish their own employees to apply pesticide(s) as part of their Pest Management Program, then the employees should be provided with sufficient knowledge, skills, training and the personal protective equipment to safely apply the pesticide(s). • The Department of Health recommends the proponents develop, implement, monitor and evaluate (and modify as required) a Pest Hygiene Management Plan which should include the prevention and control of pests (such as weeds, vectors, vermin, feral animals etc). The Pest Hygiene Management Plan should also include the education of all employees, contractors, visitors and the public to the site to ensure good hygiene practices are used to prevent pests being conveyed and attracted to operational site (and accommodation) activities. Prevention strategies may include but are not limited to; education, control over the proper disposal of waste material and the application of pesticides to further reduce the impacts of pests on the site, employees, contractors, visitors and the public.
Response: The Joint Venture is committed to the effective management of pest, weeds, vermin and feral animals. These aspects have been incorporated in to the Construction and Operational Environmental Management Strategies released with the PER. The Joint Venture will ensure that all activities using pesticides will be undertaken by a person / company that hold all relevant licenses and are appropriately trained. The Joint Venture is committed to the health and wellbeing of the Project employees and contractors and welcomes the opportunity to discuss with the Department effective pest management for the site. The Joint Venture is in the process of developing the Project IMS which ensures that all safety (as well as environmental aspects) are managed including but not limited to mosquito and pest management. As this aspect relates to health and safety issues that will be managed under the *Mine Safety and Inspection Act* and is covered by Health (Pesticides) Regulations, the Joint Venture considers that it does not require specific consideration by the EPA.	
Submission Number: D.2.4	***Mosquito management*** • The proposed development is located in an environment that may experience problems with nuisance (biting) insects after rainfall and flooding. Mosquitoes are likely to be the most common problem, but other biting flies, especially may also cause a nuisance. • A large proportion of nuisance and disease carrying mosquitoes affecting the proposed development are likely to emanate from surrounding natural mosquito breeding habitat. However, on-site infrastructure and activities also have the potential to create mosquito breeding habitat. The proposal should: • Identify the potential risk to the public (and the workforce) from nuisance mosquitoes and mosquito-borne disease.

Public/ Personnel Safety and Health	
	• Identify natural breeding sites on the subject land and within mosquito dispersal distances of the subject land. Infrastructure should be located as far away as possible from permanent and seasonally-inundated natural breeding sites of mosquitoes. • Develop an integrated mosquito management plan that addresses the following: a) Location and design of water management and water-holding infrastructure (wastewater, effluent reuse and stormwater infrastructure, drinking and plant processing water supplies, overflow areas, dams and other constructed water bodies, borrow pits, areas of scouring and water retention, etc); b) Ongoing maintenance of water management and holding infrastructure; c) Monitoring of mosquito breeding sites; d) Chemical control of mosquitoes, including larvicides, adult fogging and residual adulticides; e) Physical control (source reduction) approaches to mosquito management; f) Workforce and community education; g) Provision of screened outdoor living areas; h) Signage and health warnings; and i) Mosquito avoidance and personal protection. • Ensure site infrastructure does not create or exacerbate breeding of nuisance or disease-carrying mosquitoes. This includes wastewater and stormwater infrastructure, water holding infrastructure, overflow areas, areas of scouring and water retention, etc. • Ensure alterations of topography (e.g. resulting from earthworks / pipeline installation) that enhance retention or impoundment of rainwater and runoff, or that promote scouring are avoided so as to minimise opportunities for mosquitoes to breed.
Response: The Joint Venture is committed to the health and wellbeing of the Project Employee and Contractors and welcomes the opportunity to discuss with the Department effective mosquito management programs that the DoH has successfully implemented elsewhere within the region. The Joint Venture is in the processes of developing the Project IMS which ensures that all safety and community as well as environmental aspects are managed including but not limited to mosquito and pest management As this aspect relates to health and safety issue that will be managed under the *Mine Safety and Inspection Act*, this aspect need not be considered by the EPA.	
Submission Number: D.1.1, D.1.3, F.3.1	See Subsidiary Approvals above
Submission Number: D.3.1	See Stakeholder Engagement above
Submission Number: F.2.1	See Air Quality below
Submission Number: F.2.2	See Noise and Vibration below
Submission Number: K.7	See Groundwater below

Socio/economic Aspects	
Formal	
Submission Number: C.11	Financial and corporate support for employment and training opportunities related to environmental monitoring and rehabilitation practises.
Submission Number: C.12	Funding for Traditional Owners to seek advice on best practise environmental management practises.
Submission Number: C.16	Objectives, processes and outcomes for supporting traditional ecological knowledge based programs that complement existing cultural obligations and frameworks. Some of these objectives may include: a) Reinforcing traditional values and knowledge and renewed connections to country; b) Supporting the role of community elders in passing on traditional knowledge to next generation and strengthening ties between elders and younger generations; c) Ongoing facilitation and obligations to country; d) Respect and utilisation of people and their traditional knowledge in management of land and culture as well as providing protection and security of Australia's biodiversity and natural resource in to the future; and e) Opening up other options for sustainable local employment for indigenous people conducted within a cultural context.
Submission Number: C.17	Financial and corporate support for the development of natural and cultural heritage management programs. Objective of programs including the provision of opportunities to improve indigenous livelihoods, to identify high priority natural and cultural heritage management issues on country, increase capacity for Indigenous engagement with government and other service providers in relation to natural and cultural heritage resource management.
Submission Number: C.18	Financial and corporate support for economic opportunities, including business, employment and training opportunities, which complement existing cultural frameworks and obligations around country.
Submission Number: C.20	Financial and any other support for the development, preparation and delivery of a cultural awareness package. Cultural awareness packages to be tailored for the project and may include classroom as well as "bush" components and DVD presentations.

Response:

The State and Federal Environmental Impact Assessment processes have defined impacts that can be considered when assessing a new project. These concern impacts on 'living things, their biological and social surroundings, and interactions between all of these'. Submissions C.11, C.12, C.16, C.17, C.18 and C.20 go beyond the scope of the State and Federal Environmental Impact Assessment processes. Notwithstanding this, the Joint Venture is actively involved in developing social, education, employment and commercial opportunities associated with the Project. This is outlined in the PER document, further discussion is provided here.

Cross Cultural Education

Cross cultural training and education of employees is a key part of the Joint Venture's management of the Project (PER page 8-6 and Appendix 3F). The Joint Venture Manager (AngloGold) currently runs regular cross cultural training for its Sunrise Dam Gold Mine site, Corporate Office and Tropicana Exploration Team. It is a requirement of consultants delivering the training, that local heritage values and perspectives are incorporated so that staff and consultants at each location receive cross cultural training relevant for the site/ area at which they are working. Where suitably qualified individuals or organisations are available, it is preferred that local Indigenous people deliver the training.

Socio/economic Aspects

Youth Engagement Strategy

A Youth Engagement Strategy commenced in 2009 and consists of a series of four-year sponsorship agreements with programmes based in the Goldfields that promote education – both the completion of high school education and the mentoring of talented Indigenous youth into tertiary education.

Employment - Traineeships

Another initiative supported by the Joint Venture is designed to assist Indigenous people into the mineral exploration industry under a specifically tailored, nationally accredited traineeship. This is a course designed to qualify exploration field assistants and is currently offered through Curtin VTEC in Kalgoorlie. The first trainees to undertake this on-the-job course are currently employed by AngloGold.

This is additional to existing Indigenous employment initiatives active at AngloGold's Sunrise Dam Gold Mine.

Business Opportunities

AngloGold has a strong track record in developing new initiatives around Indigenous business engagement. Prior to the Project's commencement, processes are underway to identify and assess local Indigenous businesses to potentially provide supplies and services to the Project. This advance work is to assist with "unbundling" what may otherwise be larger single supplier contracts. Assessing contracts for supplies and services to take best advantage of supporting local industry (Indigenous and non-Indigenous) is a stated objective in the Project's planning and design.

Heritage and Environment

Other community projects (currently in concept stage) involve a heritage protection and preservation pilot program and an ethno-botany research project. Both are seeking to involve the more remote communities of Coonana and Tjuntjuntjarra and are a combination of environmental and heritage research plus training in associated skills.

During the Wongatha Claim period, AngloGold made a commitment to work closely with the Claimants to define a suitable partnering agreement between the Joint Venture and the Indigenous community aimed at improving Indigenous engagement with the Project, and to work cooperatively on community initiatives. Despite the demise of the Wongatha claim, the Joint Venture remains committed to develop new community initiatives in anticipation that a recognised Indigenous community group will ultimately be established for the East Wongatha area.

4.3. PHYSICAL FACTORS

Surface Water	
Formal	
Submission Number: F.5.2	Other site hydrology • An assessment of the surface drainage along the proposed roads were completed and appropriate management recommendations will be incorporated into the road design to prevent water pooling on roads and changes to sheet flow due to road embankments. This will include a monitoring program. How will surface drainage be addressed around other areas of the project? • Is there potential for water starvation due to a 'shadow' effect form large infrastructure, e.g. TSF and plant, in terms of sheet flows?

Response:

Surface water management has two components that will address the potential impacts on surface drainage, these are:

- diversion of stormwater from above the site; and,
- retention of site generated stormwater onsite through the creation of a gravity drainage network and storages.

A detailed Operational Area Surface Water Assessment and Surface Water Management Strategy has been presented in the PER documentation (Appendix 2-B8). With the use of a diversion drain and appropriate on-site stormwater management, there is likely to be little impact on the surface water hydrology of the surrounding landscape. Management measures include:

- the installation of stormwater diversion drains within the mining area;
- the installation of a diversion system installed across the mining area to separate clean and potentially dirty stormwater;
- the onsite retention of potentially dirty stormwater from the disturbance footprint of the Operational Area through the creation of a gravity drainage network and storages;
- the design of infrastructure to avoid ponding and the alteration of water flows. Surface water dispersion systems will also be incorporated into road corridors to prevent interference with surface flow critical for vegetation survival; and,
- the design of water pipeline corridors so as not to interfere with surface water flow and to prevent infrastructure damage by surface flows.

For additional information on the management measure associated with surface water see pages7-35 and 7-83 of the PER.

GHD (PER, Appendix 2-B8) conclude that there are not likely to be significant shadowing effects (i.e. reduction in surface water flows immediately downstream) associated with the proposed infrastructure because the reduction in local flows will be small relative to flows from the remainder of the contributing catchment at that point. In addition, impacts on local stormwater are not anticipated to propagate downstream to any degree.

Monitoring of vegetation and flora (as detailed in the Environmental Monitoring Strategy (Appendix 4) will enable timely detection of any shadowing effects, if they occur and trigger management actions if the cause of the shadowing effect is determined to be the Project.

Soil Quality and Landform	
Formal	
Submission Number: K.3	See Groundwater below

Groundwater	
Formal	
Submission Number: K.3	Given that the actual size of the 3 / 4 open pits, which if connected over time will have a length of 6 km, a width of 1.5 km and pit voids, having depths of up to 330metres, covering some 400ha, one must question what effect the pit voids draw down of the natural water table will have on the stability of the adjacent dune fields and surrounding vegetation, particularly 50 to 199 years after commencing such a huge mining operation in this desert area.
Submission Number: K.7	Our interest lie both in the mine proceeding and the continuing sustainability of the local indigenous people , the plant life , the birds and the animals who rely so heavily on the reliability of natures underground water supply and water holes throughout this semi desert land. There seems to be no protection of the natural water source being able to remain in the natural waterholes that are very important to the indigenous communities of the area.

Response:

The Joint Venture agrees that management of the environment (biological and social) is critical to the overall success of the Project. In some environments groundwater drawdown (particularly in freshwater systems) can have negative impacts on ecosystems and human use. The Joint Venture anticipate that there will be no significant impact on either the terrestrial ecosystem or the human use of freshwater gnammas and waterholes due to drawdown impacts at the mining area or the water supply borefield. This is primarily due to the hypersaline nature of the aquifers being targeted for dewatering (at the mining area) and water production (at the borefield). As the water is hypersaline it is suitable only for limited industrial uses (such as mineral processing) with no potential agricultural or domestic uses. The local area is predominately sandplains and mulga woodlands with an absence of gnamma holes and other surface water resources.

The depth to groundwater over the drawdown area around the pit void(s) is approximately 17 - 35 m between dunes and 45 - 55 m beneath sand dunes (PER Appendix 2-B17). This is greater than the typical rooting depth of local vegetation; therefore drawdown across the targeted aquifer is not anticipated to have a direct impact on vegetation. While there are some vegetation species that are known to have tap roots that could conceivably reach the water table, the saline to hypersaline quality of the groundwater precludes usage by most plants apart from halophytes. While this type of vegetation could be assumed to rely mainly on fresher run-on surface flow and through flows in the Paterson Formation for its water requirement, halophytic vegetation could possibly use saline moisture from the underlying Upper Saprolite in dry periods. However, as no deep rooted halophytic vegetation has been identified in the Operational Area this is not anticipated to be an issue.

Predicted drawdown's are not anticipated to impact dune stability and vegetation complexes as:

- linkage between the surface and the deep aquifers is minimal (due to the presence of impervious layers such as clay); and,
- the depth to groundwater over the impacted area is greater than the rooting depth of local vegetation.

The Operational Area is generally covered with vegetation complexes comprising a mixture of tree, shrub, and grass species. Established vegetation appears to be a significant factor in the stability of the dunes. The pit void drawdowns are not predicted to have an impact on vegetation and dune stability as there is unlikely to be any groundwater dependence in the region, as outlined above. The Joint Venture is confident that the drawdown impact at the Operational Area will not cause adverse environmental impacts to vegetation or dune stability.

The Joint Venture will monitor the drawdown effect over the life of the Project as described in the Environmental Monitoring Strategy (Appendix 4). Observation bores will be installed across the site to monitor the effects of dewatering on the water levels outside the mining area. Sand dunes adjacent to the dewatering operation will also be monitored for water retention levels.

At the completion of mining operations all pit dewatering will cease and water levels in remaining voids will gradually rebound and stabilise within 50 to 100 years at a depth of around 170 m above the base of the pit at Havana (approximately 250 m below surface) and around 110 m above the base of the pit at Tropicana (approximately 150 m below surface). The water level in the void(s) will be impacted by the influx of both direct rainfall recharge and groundwater seepage, until it comes to an equilibrium point where this influx is balanced by evaporation from the void. As the evaporation potential at the site is extremely high, water levels in the void(s) are expected to remain quite low. Water quality in the voids is predicted to be hypersaline.

Submission Number: A.1	See Stakeholder Engagement above

4.4. BIOPHYSICAL/BIODIVERSITY FACTORS

Flora and Vegetation	
Formal	
Submission Number: J.1	The proposal manages the flora and vegetation factors adequately
Submission Number: J.3	There are a few minor technical inconsistencies in the PER but these do not detract from the overall report. These are marked on the copy of the PER which is being returned to you.
Response: The Joint Venture is pleased to have been able to address all issues to the satisfaction of the DECs Terrestrial Ecosystems Branch (now OEPA). The technical inconsistencies referred to relate to the Joint Venture's conservative consideration of species recorded outside of their previously known range as being species of conservation interest, as these records are of scientific interest. The OEPA is correct in noting that these species are not listed at a State, Federal or Priority species level.	
Submission Number: C.14	Additional flora and fauna surveys be undertaken with Traditional Owners to assess the existing environment from a cultural perspective.
Response: The Joint Venture has undertaken all baseline flora and fauna surveys in accordance with the requirement specified in EPA Guidance Statement 51 and 56 - *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* and *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* respectively, and has provided stakeholders for a broad range of opportunities to contribute to the environmental management and design of the project. The Joint Venture continues to maintain open communication and consultation with all stakeholders on all aspect of the Project.	
Submission Number: F.1.2	<u>Dust</u> • It is noted that dust suppression and dust extraction systems will be used on the crushing plant. Water from the bore fields, removed from the pit and from rain events will be used for dust suppression on the roads. The roads will be built in locations that avoid listed flora and with drains installed to capture runoff. Monitoring of road side vegetation will be implemented; it is recommended that the proponent describe this monitoring plan and frequencies. • It is also stated that dust suppressants will be applied, at what frequencies?
Response: Monitoring for dust impacts along the Mine Access Road and internal roads will use regular photo-point monitoring from fixed points to assess any changes in vegetation. In addition, a formal comparison of the condition of flora and vegetation will be conducted between areas within a buffer zone that is potentially impacted by operations and within areas that are outside of the potential zone of impact and therefore subject only to background/ natural impacts (e.g. climate). The frequency of all monitoring events is detailed in the Environmental Monitoring Strategy (Appendix 4). As discussed in the PER (page 7-34) the method and rate of use of dust suppressants will be determined based on the location and climatic conditions. A standard frequency cannot be provided although it will be driven by safety requirements and environmental considerations. It is likely that the management of dust around the mining areas will be a daily / ongoing event.	
Submission Number: H.5.1	See Management/ Monitoring Strategies above
Submission Number: H.6.1	See response to Management Commitments and Offsets
Submission Number: F.5.2	See Surface Water above
Submission Number: H.1.1, H.2.1, I.1	See Management/ Monitoring Strategies above.

Flora and Vegetation	
Submission Number: H.3.2	See Design above.
Submission Number: H.7.1, K.2	See Closure below.
Submission Number: K.3, K.7	See Groundwater above

Terrestrial Fauna including Invertebrate Fauna	
Formal	
Submission Number: J.2	Fauna issues are comprehensively assessed and management of fauna factors appears to be adequate.
Submission Number: J.3	There are a few minor technical inconsistencies in the PER but these do not detract from the overall report. These are marked on the copy of the PER which is being returned to you.
Response: The Joint Venture is pleased to have been able to address all issues to the satisfaction of the DECs Terrestrial Ecosystems Branch (now OEPA). The technical inconsistencies referred to relate to the Joint Venture's conservative consideration of species recorded outside of their previously known range as being species of conservation interest, as these records are of scientific interest. It is acknowledged that these species are not listed at a State, Federal or Priority species level.	
Submission Number: A.2	One Councillor did make a comment that any formation created on this Project that can hold water, such as tailings dams, refuse sites etc should be fenced to exclude wildlife entering those bodies of water and perishing.
Response: Fencing, as well as egress methods including options such as mats, ramps and ladders will be used to firstly exclude, and then provide egress opportunities for fauna. Regular inspections of water bodies and refuse sites are incorporated in the Environmental Management Strategy (Appendix 4).	
Submission Number: H.4.1	**Marsupial mole** **Issue: The assessment on risk of isolation and fragmentation of marsupial mole habitat (connectivity of dunes) is incomplete.** ***Recommendation 9:*** *That the proponent provides the marsupial mole habitat fragmentation addendum to DEC for review and comment as required.*
Response: The Joint Venture completed and provided the DEC with an additional report addressing the potential impacts of the Project on the isolation and fragmentation of Marsupial Mole habitat on 23 December 2009. The report is reproduced in Appendix 3G and is discussed above in Section 3.3.2. Benshemesh concludes that although the Project is predicted to remove approximately 15 km of dunes, the loss is not likely to threaten the conservation of the species either locally or in the surrounding areas. The construction and use the Mine Access Road may cause some local adverse impacts on the local population of Marsupial Moles but these are unlikely to be significant. Joe Benshemesh is of the belief that the proposed infrastructure corridors are unlikely to compromise the conservation of marsupial moles in the region for the following reasons: • Marsupial mole habitat (dunes) has been specifically avoided in the proposed routes for the Mine Access Road and the communications corridor, and for most of their length the proposed routes follow swales. • There is no evidence that traffic noise/ vibrations provides a major difficulty to Marsupial Moles: mole holes have been detected alongside railway lines that have carried several trains a day for many decades, and occurred at similar densities to locations more than one kilometer away from the railway (Benshemesh 2005), suggesting that the species is not especially sensitive to periodic noise and vibration. • The disturbance footprint for the Mine Access Road (and internal roads) will be relatively narrow (up to 20 m) and for much of its length would probably still be passable for Marsupial Moles that attempt to travel on the surface from one side of the road to the other. • The proposed roads (internal roads and the Mine Access Road) are temporary. As described in the PER, all new roads will be removed and habitats rehabilitated when the mine is closed. Thus, even if the roads were to present a barrier to Marsupial Mole movement during the life of the Project, this barrier would be removed within 15 - 20 years. This is a relatively short period of time considering that the available habitat on either side of the Mine access Road is extensive and totals several thousand kilometers of dune habitat.	

Terrestrial Fauna including Invertebrate Fauna	
Submission Number: H.4.2	**Sandhill dunnart** **Issue: Sandhill dunnart information remains outstanding.** ***Recommendation 10:*** *That the proponent provides the following information to DEC for review and comment as required:* • *Local conservation status of the sandhill dunnart habitat paper.* • *Results and analysis of sandhill dunnart sampling (survey work) that is currently being undertaken by Glen Gaikhorst.*

Response:

Initial studies commissioned by the Joint Venture for the PER assessed the habitat at the Operational Area followed by trapping in areas identified as containing potentially suitable Sandhill Dunnart habitat. Trapping was conducted during March and May in 2008 across the Operational Area, Pinjin Infrastructure Corridor and the Public Bypass (Gaikhorst and Lambert 2009; Appendix 2-F1 of the PER). No Sandhill Dunnarts were captured or observed during the trapping. That report did not clearly document the habitat criteria used to classify the suitability of the areas inspected. This issue was resolved through the development of a supplementary report on habitat assessment criteria and fire age (Appendix 3G). A summary of all additional Sandhill Dunnart work undertaken to date is provided above in Section 3.2.1. Reports are contained in Appendices 3E, F, G and H.

Discussion with DEC on 26 October 2009 raised the need to undertake an independent habitat assessment for Sandhill Dunnarts in the Project area. During this meeting it was agreed that additional information would be provided on work linking the Western and South Australian Sandhill Dunnart populations, possible habitat distribution in the WA GVD and that an additional field survey would be undertaken.

To understand the potential distribution of the species in the wider GVD an assessment of the habitat availability for the Sandhill Dunnart in Western Australia has been performed by Sue Churchill (independent specialist; Appendix 3E). The assessment concluded that the majority of the proposed disturbance footprint at the Operational Area is situated in habitat considered Marginal for Sandhill Dunnarts. Areas along the proposed Pinjin Infrastructure Corridor have more suitable habitat (Figure 5.3). However, the proposed alignment will minimise disturbance to Sandhill Dunnart habitat and is likely to have only minimal impact on any Sandhill Dunnart populations that may use the area.

GHD Pty Ltd and Sue Churchill completed a supplementary Spring survey of prime and likely habitat in November 2009 (Appendix 3F). Trapping was undertaken in the Operational Area, along the Pinjin Infrastructure Corridor in habitat that had the potential to contain Sandhill Dunnarts and at a location nearby where animals had been previously trapped by Gaikhorst and Lambert (unpublished data). An additional 3,510 trap nights were conducted with no Sandhill Dunnarts recorded.

Further information on genetic differentiation and supplementary habitat parameters from the PER are provided in Section 3.2.1.

All additional reports associated with the Sandhill Dunnarts have been provided to DEC (December 2009 and February 2010).

Submission Number: H.4.4a	**Short range endemic (SRE) invertebrate fauna** **Issue: The SRE invertebrate fauna community requires monitoring and adaptive management for protection.** ***Recommendation 12:*** *That the proponent develops a monitoring program to provide information on the indirect impacts from mine activities on SRE invertebrate fauna, and implements adaptive management measures to minimise impacts on these species, on the advice of, and in agreement with, DEC.* **Discussion** The project area "...*is located in a region unexpectedly rich in invertebrate diversity*" (Appendix B4, page iv). The proponent is developing a monitoring program and adaptive management strategy for the SRE community in the project area. This program and strategy should be developed on the advice of, and in agreement with, DEC.

Response:

The Joint Venture commissioned further work with the aim of collecting the potential SRE species *Kwonkan* sp. 2 and *Aganippe* sp. 4 and describing in more detail the habitat preferences and distribution of these species. This work focused on mapping habitat distribution within and around the disturbance footprint at the Operational Area, defining preferred habitat and

Terrestrial Fauna including Invertebrate Fauna

a broadened DNA study of all GVD specimens of the genera *Aganippe* and *Anidiops*. Results of the studies are described in Section 5.4 and a full copy of the report is provided in Appendix 3J of this document.

Based on the findings of these studies the Joint Venture has developed a monitoring program (see Environmental Monitoring Strategy; Appendix 4) which details SRE monitoring to ensure indirect impacts on potential SREs are minimised.

The monitoring procedure consists of conducting:

- annual census of all Mygalomorph burrows present;
- vegetation monitoring; and,
- ground cover monitoring.

The comment that the Project area "...is located in a region unexpectedly rich in invertebrate diversity" (PER Appendix 2-B4, page iv) was made in reference to the minimal existing information on invertebrate fauna in the area. This statement is no longer seen as an accurate reflection of the invertebrate diversity of the GVD. The statement in the PER's Appendix 2-B4 reflects the fact that there was little information available prior to the Joint Venture's investigative activities, and as such there was effectively a knowledge base of zero from which to make initial expectations.

The Joint Venture is please to have been able to provide the scientific and conservation communities with additional information on these understudied groups.

Submission Number: H.4.4b	**Short range endemic (SRE) invertebrate fauna** **Issue: The information currently available on *Kwonkan* sp. 2 habitat is insufficient to adequately determine risk from this proposal.** ***Recommendation 13:*** *That the proponent provides the for thcoming Kwonkan sp. 2 habitat risk assessment addendum to DEC for review and comment.* **Discussion** *Kwonkan* sp. 2 has only been identified within the proposed disturbance footprint. A refined habitat assessment for this species has been compiled and an addendum is being developed. This addendum should be provided to DEC for review and comment.

Response:

The Joint Venture commissioned further work with the aim of collecting *Kwonkan* sp. 2 species in autumn 2009. This work focused on defining preferred habitat and mapping its geographic distribution within and around the disturbance footprint at the Operational Area. This study is provided in Appendix 3J of this document and is summarised in Section 5.4.

No *Kwonkan* sp. 2 specimens were recorded during the surveys. In the absence of specimens of *Kwonkan* sp. 2, the focus of the work was on the identification of apparently suitable habitat of the species and its geographic distribution. The presumed preferred habitat was identified using information from the original 2006 survey in which *Kwonkan* sp. 2 was first collected (the only time it has been collected), published literature and comparisons with other species located onsite. Three habitat types were identified as potentially suitable for *Kwonkan* sp. 2, of which two occurred both inside and outside the disturbance footprint and one that occurred fully outside the footprint. None of these habitats were classified as 'island habitats' (isolated from similar types of soil and vegetation by environments deemed inhospitable to the species). The habitats identified were fully overlapping with the habitat of *Kwonkan* sp. 1 and partially overlapping with habitats of *Aganippe* sp. 2/7 and a new species, *Swolnpes darwini*. Given this similarity, the spatial distribution of *Kwonkan* sp. 2 is most likely to follow similar patterns as those of *Kwonkan* sp. 1, *Aganippe* sp. 2/7 and *Swolnpes darwini*. As the habitats of these species extend beyond the boundaries of the proposed disturbance footprint it is therefore likely that *Kwonkan* sp. 2 will be only partially impacted by the proposed Project, and that this impact will not be significant to the species.

Submission Number: H.4.4c	**Short range endemic (SRE) invertebrate fauna** **Issue: The information currently available on *Aganippe* sp. 7 is insufficient to adequately determine the impacts from this proposal.** ***Recommendation 14:*** *That the proponent provides information on the size of the Aganippe sp. 7 populations outside the impact footprint addendum for DEC review and comment.*

Terrestrial Fauna including Invertebrate Fauna	
	Discussion Further population information is required on *Aganippe* sp. 7 to confirm that this species has a viable population outside the project footprint (west of Lake Rason paleo-drainage channel). DEC understands that this information is forthcoming from the proponent.

Response:

The Joint Venture is not in a position to determine the size of the population (i.e. number of spiders) of *Aganippe* sp. 7, either in- or out-side of the proposed disturbance footprint. The Joint Venture can however assess the availability of habitat in- and out-side of the proposed footprint. As described in the response to submission H.4.4a, the aim of the Joint Venture's autumn 2009 survey work was to map geographic distribution, define preferred habitat and undertake a DNA study of specimens of the genera *Aganippe* and *Anidiops*.

The studies resulted in twelve specimens of *Aganippe* sp. 2/7 collected in 2009 both inside and outside the proposed Operational Area footprint (Appendix 3J). On the large scale, the species was found in two distinct vegetation units (Beard 1975):

- Low woodland; *Acacia aneura* (mulga); and,
- Hummock grasslands, open low tree steppe; *Acacia aneura* (mulga), *Casuarina pauper* (sheoak) [syn. *C. cristata*] over *Triodia basedowii* between sand ridges.

On a small scale within the two vegetation units the species was associated with pockets of habitat types which were defined for the purpose of the report as:

- sandy, eucalypts and acacias;
- sandy, she-oak and acacias;
- loamy open ground, she-oak and acacia; and
- loamy, acacia.

The study showed that these pocket habitats extended a minimum of 12 km beyond the proposed footprint suggesting that the preferred habitat of this species is well represented in the area.

Submission Number: A.2, H.3.2	See Design above.
Submission Number: C.14	See Flora and Vegetation above.
Submission Number: F.1.1	See Pollution of Land and Water below.
Submission Number: F.2.1	See Air Quality below.
Submission Number: F.2.2	See Noise and Vibration below.
Submission Number: F.4.1	See Subsidiary Approvals above.
Submission Number: H.1.1	See Management/ Monitoring Strategies above.
Submission Number: H.3.2	See Design above.
Submission Number: H.7.1	See Closure below.
Submission Number: I.1	See Management/ Monitoring Strategies above.
Submission Number: K.7	See Groundwater above.

Subterranean Fauna	
Formal	
Submission Number: H.4.3	**Troglofauna** **Issue: Troglofauna data are insufficient to adequately determine risk from this proposal.** ***Recommendation 11:*** *That the proponent provides the following information to DEC for review and comment as required:* • *Results and analysis of troglofauna sampling (survey work) that is currently being undertaken.* • *Prospective troglofauna habitat risk assessment addendum.* **Discussion** Two species of troglofauna (a dilpluran and a centipede) have been identified only within the proposed disturbance footprint. DEC understands that the equipment and methods used in setting the traps for the troglofauna sampling were flawed, and that the proponent has commissioned another sampling phase to rectify this, with collection due at the end of December. Further, the Lawrence report (Appendix B20) does not adequately describe the nature, extent and continuity (connectivity) of the prospective troglofauna habitat. An addendum to Appendix B20 to clarify prospective troglofauna habitat connectivity is forthcoming.
Response: *ecologia* Environment has produced a summary report documenting all seven phases of Troglofauna sampling (five of which were used in the PER, two of which were completed after the PER's publication). A copy of this report is attached in Appendix 3L of this document. The two additional rounds of sampling completed since the PER was released have recorded a number of additional occurrences of the Isopod inside and outside the Operational Footprint plus a fourth species of Trogolofauna (a cockroach) that was identified both inside and outside of the disturbance footprint. No new occurrences of the dipluran or centipede were recorded. To confirm the habitat most likely as being used by the Troglofauna community, fourteen regolith cross sections have been compiled across the Operational Area. Six of these sections are located in areas where Troglofauna have been collected, each contains regions presumed 'prime' habitat of the Troglofauna community – porous strata located above the water table. These strata are extensive, and are linked by 'bridge' strata to other areas of 'prime' habitat. Thus lateral and vertical connectivity across the landscape appears likely. See Section 5.5.2 for a summary of the work, and Appendix 3L for the report.	

4.5. EMISSIONS AND POLLUTION MANAGEMENT

Pollution of land and water	
Formal	
Submission Number: F.1.1	**Emissions and Discharges** **Category 5: Processing or beneficiation of metallic or non-metallic ore** <u>Tailings</u> • Tailings will be thickened, what are the expected % solids? • Seepage will be controlled by an under drainage network including HDPE liner beneath the decant ponds and surrounding the decant tower and a clay liner for the remaining area of the TSF. It is understood from verbal conversations with the proponent that if there is insufficient clay locally available that the TSF will be partially lined with HDPE and the rest with locally sourced clay. Within the works approval application DEC would expect information on the expected permeability and seepage rates be, including the impact on the groundwater flow direction and potential SWLs due to seepage. • Has the root zone depth in the area of the proposed TSF been determined? Nearby native vegetation being impacted by groundwater mounding will be a factor needing operational protection. • WAD cyanide is aimed to be kept below 50mg/L as per the cyanide code. Monitoring will take place to ensure compliance however it is stated that contingency plans such as UV irradiation etc. will be considered only after the first year of monitoring. Apart from the TSF being fenced, what measures will be put in place, during this year, to ensure that wildlife is not impacted if levels are above 50mg/L? • The baseline contents of major geochemical constituents have not been included, what are the expected heavy metal, pH and salinity of the tailings including the leaching characteristics? • Bore monitoring stations will be constructed down steam of the TSF and dewatering bores installed when and if required. Baseline data will be recorded and SWL of the bores will be checked monthly and water quality quarterly during operation. Also will upstream bores be included? • The TSF pipeline will be installed away from sensitive areas and within low permeability bunds. The pipeline will be inspected at least once per shift and include pressure senses and alarm systems. The DEC will need confirmation at works approval stage that the pipeline be welded to Australian Standards and that the containment system will also include catchment pits in the event of a large pipeline spill. • The TSF will be designed to retain a 1 in 100 year 72 hour rainfall event, what has this capacity been calculated as, the DEC will require demonstration that a 0.3m freeboard is adequate during the works approval process.

Response:

The Joint Venture acknowledges the importance of managing the Project's tailings storage facility (TSF) well to ensure that adverse impacts are prevented wherever possible. In response to the submitted question, the Joint Venture provides the following information and will ensure that the Works Approval and Tailing Operations Manual provide all relevant information:

- As indicated in Section 2.6.2 of the PER, the tailings material will be stored and discharged at a solids content of 60 – 70 %. This solid content equates to a solid: solution ratio of approximately 1:0.3 (assuming a bulk density of 1.8 t/m^3) (PER Appendix 2-B19).
- The potential for seepage from beneath the proposed TSF will be minimised by the use of a tailings thickener and further minimised by the installation of a low permeability liner (HDPE and clay). Modelling undertaken by Knight Piesold (Appendix 2-B15 of the PER) predicted that seepage rates for the proposed TSF under normal operational conditions and extreme wet conditions would both remain below the guideline limits of 1 kL/ha/day, as set by the Department of Water (2006). Therefore the seepage rate from the TSF is not considered a significant issue. The Joint Venture will ensure that information regarding the expected permeability and seepage rates will be provided in the Works Approval application

Pollution of land and water

submitted prior to the construction of the TSF, including the potential impact on the groundwater flow direction and potential SWLs due to seepage.

- A broad assessment of the rooting zones has been undertaken across the site although no specific assessment has been completed around the proposed TSF area. An assessment will be completed prior to the submission of the TSF Works Approval application. While this assessment has not been completed the Joint Venture is aware of this issue and has incorporated a liner and under drainage system into the design of the facility. As discussed in the previous dot point, modeling by Knight Piesold suggests that the seepage rate for the facility with a combination HDPE/ clay liner will be less than 1 kL/ha/day.
- To clarify, the Cyanide Code does not specifically set a limit on the level of WAD cyanide in water on the facility. Rather, the Cyanide Code requires that measures be implemented to protect birds and other wildlife from the adverse effects of cyanide. The Joint Venture acknowledges that there is evidence that WAD cyanide levels above 50mg/L can be lethal *in a fresh water environment*. Research undertaken in the Goldfields region at Sunrise Dam Gold Mine and a number of other mines *in a hypersaline water environment* such as that anticipated for the Project have found that WAD cyanide levels about 50mg/L are non-lethal. As such, the Code allows proponents to undertake research to verify situations where WAD cyanide levels are non-lethal, even if above 50mg/L. The Project will be investigating this situation during the first 12 months of the operation. In addition to fencing the following measures will be undertaken to prevent cyanide impacts to wildlife:
  - The TSF has been designed to limit the amount of free water stored on the facility, the water recovery system will be operated to remove decant water from the TSF as quickly as practicable for use in the plant. Reducing the availability of free standing water reduces the attractiveness of the TSF to wildlife.
  - Monitoring of the TSF will be according to the Environmental Monitoring Strategy (Appendix 4 of this document) and the Tailings Environmental Management Strategy (Appendix 3G of the PER).
  - Water birds will be monitored and discouraged from entering into or remaining within the area. The facility will be monitored daily and any observed animal deaths will be recorded as an incident and investigated.
  - The proposed Processing Plant is evaluating the installation of real time cyanide monitoring in the carbon in leach tanks to enable the management of cyanide usage and thus cyanide levels in the tailings discharge.
- Table 2.10 of the PER's Appendix 2-B19 provides the predicted elemental composition of the tailings material and proportion of the total solid content leached during processing. From these results it can be seen that desorption characteristics for most of the environmentally sensitive metals present in sufficient quantities (i.e. Barium, Cobalt, Chromium, Manganese, Molybdenum, Lead, and Vanadium) are very low under the geochemical conditions present in the tailing system. Only copper shows significant mobilisation and this is likely due to the increased solubility of most Cu-compounds in dilute alkaline sodium cyanide solutions. No metalliferous drainage is likely to occur below the TSF, as the prevailing geochemical conditions are likely to restrict metal desorption and bioavailability (PER Appendix 2-B19). Any sulfides contained within the TSF are likely to remain in a reduced state as a result of the high residual water content of the tailings and subsequent low oxygen diffusion rates. As stated in the PER's Appendix 2-B19, the tailings material stored within the TSF will have a pH of around 9 (strongly alkaline). Predicted salinity of the tailings is yet to be determined. Additional information regarding the predicted composition of tailings will be obtained during the feasibility study. This data will be incorporated into the TSF Works Approval application.
- Observation bores will be installed across the site to monitor the effects of dewatering on the water levels outside the proposed mining area. Bore monitoring stations will be constructed upstream as well as downstream of the TSF.
- The pipeline will be welded to Australian Standards and the containment system will also include catchment pits in the event of a large pipeline spill. This will be confirmed with the DEC at the Works Approval stage.
- The TSF is designed to completely contain a 1 in 100 year recurrence interval, 72 hour duration storm event, or a 1 in 100 year recurrence interval wet annual rainfall sequence. The TSF is designed to operate with a minimum of 0.3 m freeboard, to ensure that the potential for tailings or water to overflow the embankment is minimised. The shape of the proposed tailings beach is such that the rainfall runoff from a Probable Maximum Precipitation event can be contained within the TSF. The Joint Venture will demonstrate the adequacy of the 0.3 m freeboard during the Works Approval process.

As these management aspects are covered by Part V of the State *Environmental Protection Act 1986* and *Mining Act 1978* it would appear that these aspects need not be considered by the EPA as part of this Part IV approval.

Pollution of land and water	
Submission Number: F.6.1	Chemical storage • The site will be built in accordance with the cyanide code and hydrocarbons will be stored on sealed surfaces in bunded locations, compliant with AS1940: 3780 and 4452. A compulsory spill reporting and spill emergency response procedure will be incorporated and a bioremediation facility will be included. Apart from cyanide and hydrocarbons what other chemicals will be stored on site and in what quantities and will they be stored to the same standard?

Response:

Chemicals associated with a typical gold mining operation that may be stored onsite include:

- explosives;
- lime;
- acid;
- caustic;
- cyanide;
- di-iso butyl ketone;
- hydrocarbons (such as total petroleum hydrocarbons, benzene, toluene, polycyclic aromatic hydrocarbon, volatile and semi-volatile organic compounds).

As the Joint Venture is still undertaking the detailed design of the facility, details regarding specific chemicals and quantities are yet to be determined. This information will be provided by the Joint Venture as part of the Works Approval application. The Joint Venture will ensure that all chemicals utilised on site will be stored in accordance with the appropriate Australian Standards and other relevant regulations.

As these management aspects are covered by Part V of the State *Environmental Protection Act 1986, Dangerous Goods Safety Act 2004,* and *Mining Act 1978* it would appear that these aspects need not be considered by the EPA as part of this Part IV approval.

Air Quality	
Formal	
Submission Number: F.2.1	**Category 52: Electric Power Generation** Gaseous • Atmospheric dispersion modelling was carried out, including analysis of PM_{10}, NO_2, SO_2, CO and VOC's. These indicated that there was no expected impact on threatened flora and fauna located due west or at the village; other sensitive receptors are 200 km away. During the works approval stage detailed designs will be needed of the power station location in relation to the rest of the infrastructure and identified threatened flora and fauna? Why is an impact in all directions not discussed? • What is the expected velocity and moisture content of emissions? • The power station will have a capacity up to 40MW and be run on diesel with substitution of less-polluting fuels considered as they become available. During the works approval stage the key design features including stack height, diameter and sampling points and have their influence will have to be considered further. • An emergency response plan will be developed in the event of unplanned emissions. The project has also been designed to incorporate a 5 star energy rated village, a low emissions fleet, optimised mining schedules and low energy equipment in the plant. Periodic monitoring of the site will also be carried out, at what frequencies?
Response: During the Works Approval stage, the Joint Venture will provide details regarding the location of the proposed power station with respect to other infrastructure at the Operational Area as well as threatened flora and threatened fauna habitat. Impacts associated with gaseous emissions derived from the proposed power station are not anticipated due to the remote nature of the site. The PER discusses the potential impact of emissions travelling from the plant site towards the only two sensitive receptors in the area - the village and the western dunefield that supports a large number of conservation significant species. The PER and associated documents do not provide discussion on potential impacts resulting from gaseous emissions in all directions around the plant site as the Operational Area is situated in an isolated area with no other existing nearby residences or sensitive receptors. Key design features of the proposed power station will be provided during the Works Approval stage including the expected velocity and moisture content of emissions, stack height, diameter and sampling points. An emergency response plan will be developed for the Project; this will address significant events such as large hydrocarbon or tailings spills and other unplanned emissions. In line with EPA Guidance 12 (2002), the Joint Venture has committed to undertake an ongoing program of monitoring, reporting and reducing emissions, as required under the Greenhouse Challenge, NGERS reporting and EEO participation. Annual monitoring will be carried out according to the Environmental Monitoring Strategy (Appendix 4 of this document). The Joint Venture considers that as this aspect is covered by the Part V of the State *Environmental Protection Act 1986* and because the site is not adjacent to any local communities this aspect need not be considered by the EPA.	
Submission Number: D.2.1	See Public Safety above.
Submission Number: F.1.2	See Flora and Vegetation above.
Submission Number: H.2.1	See Management/ Monitoring Strategies above.

Noise and Vibration	
Formal	
Submission Number: F.2.2	Noise As the nearest sensitive receptors are 200 km away, the biggest noise impact is considered to be on fauna in the area, they are expected to become accustomed to the noise or move out of the area and into nearby large areas of relatively undisturbed habitat. Will silencing units be installed to lessen this impact?
Response: The Joint Venture does not intend to install silencing units on the proposed power station. However, the Joint Venture will be aiming to limit the noise level emitted from the facility to reduce the level of noise exposure to employees and contractors working in the area in accordance with the State *Mining Safety and Inspection Act*. It is expected that fauna will become accustomed to the ongoing noise at the Operational Area and return to areas of suitable habitat over time. As this aspect is covered by the Part V of the State *Environmental Protection Act 1986* and because the site is not adjacent to any local communities the Joint Venture considers that this aspects need not be considered by the EPA.	

4.6. OTHER

Rehabilitation and Closure	
Formal	
Submission Number: C.24	The Joint Venture ensures that, from an environmental perspective, Traditional Owners are consulted in every facet of the closure and rehabilitation of the mine. That the Traditional Owners knowledge and expertise is utilised in the re-vegetation of the mine site.

Response:

The Joint Venture will continue to engage with key stakeholders over the life of the Project on a broad range of aspects including, but not limited to, closure and rehabilitation activities. Relevant stakeholders include regulators (DEC and DMP), interested NGOs (e.g. Wildflower Society, Wilderness Society) and Indigenous communities.

It is envisaged that Indigenous consultation will include ongoing discussions with the Indigenous Reference Group and will provide opportunities for Indigenous knowledge and concerns to be incorporated into rehabilitation and closure activities across the Project.

Submission Number: C.25	The Joint Venture ensures that Traditional Owners are included in partnerships involved in the 'Commitment to Research' strategy.

Response:

The PER discusses the Joint Venture's recognition of the current lack of published knowledge on the re-establishment of ecosystems in the Project area. The Joint Venture will seek input from a variety of stakeholders with demonstrated experience in land management and ecosystem restoration. The Joint Venture welcomes the input of knowledge and experience from local Indigenous communities relevant to the Project's rehabilitation. As stated in the PER "The Joint Venture is committed to working cooperatively with local Indigenous communities, to build relationships to explore opportunities related to the Project's development that will result in enduring beneficial community outcomes." The Joint Venture will facilitate the inclusion of members of the Indigenous community in rehabilitation activities for the Project via the Indigenous Community Partnership which may include the Indigenous Trainee Program, or other mechanisms, as the Project develops.

Submission Number: I.3	As part of the assessment the company should be undertaking research into rehabilitation in the area and also the EPA should be making sure there is a sufficient bond in place to cover this matter. This is particularly necessary because of the nature of the area, little knowledge of rehabilitation in such a place and the impacts of a changing climate.

Response:

The Joint Venture agrees with the importance of an appropriate rehabilitation program for the Project to ensure that the end result at closure is both environmentally and socially acceptable. The Conceptual Closure and Rehabilitation Management Strategy (PER: Appendix 3D) demonstrates how the Joint Venture is considering rehabilitation as an integral part of the Project. This includes proposed pathways to the identification, implementation and successful achievement of completion criteria for the Project.

The pathway to successful rehabilitation, and hence closure and relinquishment, is to secure baseline data, adapt leading practice from other sites (where appropriate) for the local conditions, develop an adaptive rehabilitation strategy and conduct research into areas of remaining uncertainty. An adaptive strategy to rehabilitation will assist the Joint Venture in dealing with any impacts resulting from climate change over the life of the Project and rehabilitation phase. The Joint Venture is collaborating with external parties such as the Botanic Gardens and Parks Authority (a recognised lead agency in restoration ecology in Western Australia) and other appropriate specialist organisations (such as the EPA) to ensure the knowledge required to achieve successful rehabilitation is obtained.

One of the challenges that the Joint Venture faces is the general lack of information on appropriate and successful rehabilitation techniques and protocols for similar environments within Australia. For example, the bulk of the Project is located in the GVD, which contains very few active mining projects and thus almost no information on historic rehabilitation practices is available. Another challenge is the lack of an appropriate analogue site. The Joint Venture has recognised and accepted these challenges and has taken a 'first principles' approach to rehabilitation and closure. This centres on recognising natural landforms and ecosystems in the area that can be incorporated into the final rehabilitated landscape and identifying techniques to replicate them (e.g. propagation and topsoil/ growth medium handling).

Rehabilitation and Closure	
A Rehabilitation Research Program will be designed and will be carried out over the life of the Project, with some aspects already completed (e.g. erosion modelling for the waste landform see the PER's Appendix 2-B11 and 2-B12) and other aspects to be carried out progressively (e.g. investigations of appropriate propagation techniques for framework species). Bonds for the Project will be determined by the appropriate regulator.	
Submission Number: H.7.1	See Closure below
Submission Number: G.2	Please note that AngloGold will need to submit a Preliminary Closure Plan when they submit the Mining Proposal.
Response: The Joint Venture acknowledge the requirement to submit a Preliminary Closure Plan with the Project's Mining Proposal under the State *Mining Act 1978* and will look to adjust any gaps in the Conceptual Closure and Rehabilitation Strategy released with the PER to fulfil this requirement. In addition, a Proposed Mine Closure and Rehabilitation Strategy will be prepared within five years of project commencement, and reviewed every two to three years. A draft Approved Mine Closure and Rehabilitation Strategy will be prepared three to five years prior to the end of the Project's operational phase and submitted to the relevant stakeholders for comment and endorsement.	
Submission Number: H.7.1	**REHABILITATION AND CLOSURE** **Issue: The proposal will leave a permanent water-filled void at closure. The availability of free water within the pit void may result in long-term impacts on the biodiversity of the area.** ***Recommendation 18:*** *That conditions be applied to minimise the impacts of an increase in fauna and introduced animals attracted to the post-mining water-filled void.*
Response: The availability of free water within the pit void is not anticipated to result in long-term impacts on the biodiversity of the area, as the water will be hypersaline. Due to the location of the Project away from pastoral areas where goats are a significant issues and a general lack of fresh water in the region feral animal (e.g. camels and goats) are in low numbers. Given the high salinity of groundwater influx to the pit and the concentrating impact of the high evaporative potential in the desert environment, void water will be extremely saline, and too high to support native or feral fauna, even at the initial cessation of dewatering activities (PER: Appendix 2-B17). An exclusion bund around the void(s) and the strategic removal of sections of the access ramps will also act as a hindrance to native and feral fauna entering the pit void. It is therefore unlikely that the post-mining ephemeral hypersaline void will lead to an increase in the feral animal population.	
Submission Number: I.2	Mine closure planning is important right from the commencement of the project. It is vital the government and the community are not left with a degraded environment to try to repair. We will look with interest at the final management plans for the project and believe these should be made publicly available.
Response: Mine Closure Planning is a very important part of the Project. Section 10 of the PER outlines the Joint Venture's approach to the rehabilitation and eventual closure of the Project. The post operational intention for the Project is: *To establish a sustainable native ecosystem that is as similar to the pre-existing ecosystem as can be achieved within the limits of recognised good practice rehabilitation methods and the post-mining environment (adopted from the International Council of Mining and Minerals 2005).* The Conceptual Rehabilitation and Closure Strategy has been made available to the public with the PER (Appendix 3D). Updated strategies will be documented as the mine progresses and will be released to all interested stakeholders. The development and refinement of these closure strategies will be informed by a closure and rehabilitation research program and through consultation with stakeholders and the wider community over the life of the Project, to ensure that the needs and expectations of all stakeholders are considered when planning the closure of the Project.	

Rehabilitation and Closure	
Submission Number: K.2	there appears to be little detail within chapter 10 of this report on what considerations and exactly what is proposed to be committed by Tropicana to protect and conserve the biological diversity and ecological integrity on the close out of the mine. This includes the rare species of Conospermum toddii and other flora within the Yellow / Orange Dunefields that lie immediately to the west of the proposed mining area.

Response:

At the commencement of the Project the Joint Venture established a series of design requirements aimed at protecting and conserving critical biological and heritage values within the Project's tenure. These criteria have been considered at every stage of the planning and design process and have resulted in the Project's footprint being designed to avoid all known DRF populations and minimise direct impacts to fauna protected under the State *Wildlife Conservation Act 1950*, as well as minimise impacts to Priority flora and fauna. See Section 3.1 of the PER for more information. In terms of the post-mining environment, the Joint Venture is committed to leaving a reconstructed landscape that is safe, stable and blends into the surrounding landscape (i.e. outer slopes of the waste landform similar to the dunes within the area). The ecosystem established across the site will be comprised species present in the local landscape prior to the Project commencing, with particular focus being placed on the return of framework species (such as Marble Gums, Mulga, mallee eucalypts, Black Oak), dominant understorey species including *Triodia basedowii*, Priority flora species affected by the Project and reconstructing some fauna habits through the return of tree trunks and rock mounds.

Over the life of the Project, the Joint Venture will be undertaking research to ensure that mine closure and rehabilitation is effective in terms of returning an appropriate level of biological diversity and thereby ensuring ecological integrity. Priority Flora such as some of those located in the Yellow/Orange Dunefield will be targeted in the Rehabilitation Research Program to ensure that revegetated areas contain conservation significant species at closure.

As indicated throughout the PER, the Joint Venture is avoiding all direct impacts to known populations of the DRF *Conospermum toddii* and direct impacts to the Yellow/Orange Dunefield west of the resource in the layout and throughout the life of the Project including closure. No direct impacts will occur to known populations of DRF at closure. Direct impact to the Yellow/Orange Dunefield are also being avoided in all stages of the Project as described in the PER.

Submission Number: K.4 and K.5	Comment K.4: why are the proponents of this operations being allowed to consider leaving such a large surface area of pit voids which will be recharged forever from rain and ground water seepage and then allowed to evaporate on a seasonal cyclic basis.?? With appropriate care and planning it should be possible for a very large portion of the three / four pit voids to be backfilled progressively by mine overburden and waste from the processing plant. Comment K.5: Who wants to leave a second earth scar in West Australia's landscape that may yet rival the Kalgoorlie's Super Pit for it position as one of the "10 Most Incredible Earth Scars , which is currently reported to be only 3.5 km long 1.5 km wide and 360meters deep. "Ref. The Sunday Times, November 8, 2009."

Response:

The Joint Venture has evaluated both open cut and underground mining options and has determined that the most environmentally sustainable option is to commence the project as an open cut mine with the potential of extending the Project life through the establishment of underground operation in the future. As the Project is likely to progress into an underground mine, the Joint Venture's ability to backfill the mining voids with waste materials from the open cut operation is limited as it can result in the potential sterilisation of a future underground resources that become viable over time as a result of changes to the economic scenario. Backfilling into an open cut void also create safety issues for future underground activities (see Section 2.3 and 3.3 of the PER for additional information). Notwithstanding this, the Joint Venture will uses its best endeavours to identify opportunities to backfill some areas of the void/ satellite pits as this strategy does ultimately reduce the overall Project footprint.

The Joint Venture notes that EPA Position Statement 7 acknowledges that the environmental practices and procedures adopted for a new development should be cost-effective and in proportion to the significance of the environmental risks and consequences being addressed which is consistent with the approach of economically sustainable development.

The costs associated with complete backfilling of the mining voids are substantial and may not result in an overall environmental benefit as the same mining waste would need to be temporarily stored on the surface resulting in the removal of vegetation and fauna habitats. Backfilling the mining void would make the Project economically unviable and also create further impacts to the environment. The associated greenhouse gas emissions that would be produced as a result of the use of

Rehabilitation and Closure	
earthmoving machinery to backfill the void would be substantial. The mine void itself is not anticipated to present significant ongoing environmental impacts on the landscape. Groundwater seepage and rainfall influx will be consistently evaporated due to the high year round evaporation potential in the area. It is acknowledged that hydrological modelling post-mining void indicates that the pit will never completely fill up with water and that over a year the maximum water level in the pit from its base will be 100 to 150 m and that the can be expected to periodically dry out. An assessment of potential impacts of dewatering drawdown indicated that the drawdown of water within four kilometres of the Mining area will be less than one metre, this impact is predicted to occur under the waste landforms (Appendix 2-B17 of the PER), where it does extended outside the project footprint changes in water table (located between 20 - 40 m below surface) will not affect the uncleared vegetation as they are using water sources other than the targeted dewatering aquifer (e.g. soil/ dune stored water). The potential effects on drawdown on gnamma holes located within 10 km of the mining has been modelled to be zero. In response to submission K.5, the Joint Venture has attempted to be open and transparent about the scale of the Project by referring and assessing the potential environmental of impact on the 'best / worst case scenario'. As such the actual size of the Project's proposed disturbance footprint over the life of the Project is actually anticipated to be less than the referred area, all of which (excluding the void) will be rehabilitated.	
Submission Number: K.3, K.7	See Groundwater above.

5. SUPPLEMENTARY WORK COMPLETED

The following sections present a summary of work commissioned by the Joint Venture following the publication of the PER in September 2009. This supplementary work was carried out for a variety of reasons, including:

- The Joint Venture and its commissioned consultant's considered that the findings of the PER could be strengthened by supplementary survey work (e.g. the Pinjin flora survey).
- Questions raised during the public consultation period required additional data and/or and professional opinion (e.g. habitat assessment for the Sandhill Dunnart).
- Survey work was ongoing at the time of the PER's publication. For example, the PER is based on Troglofauna sampling carried out over five trapping sessions, a sixth session was in progress in September 2009, and a seventh has now been completed.
- Work carried out by the DEC regarding the Priority flora of the GVD became available after the PER's publication.

The full results of the supplementary work can be found in Appendix Series 3.

5.1. PRIORITY FLORA REVIEW

As a result of the flora surveys completed by the Joint Venture, the Threatened Species and Communities Branch of the DEC have conducted a review of the Priority status of some of the species identified in the baseline surveys for the Project (Appendix 3A). Given the large numbers of plants and populations found during the baseline surveys, the DEC has determined that revisions to the Priority Flora list were warranted. The review resulted in the downgrading of *Grevillea secunda*, *Olearia arida* and *Dicrastylis cundeeleensis* to Priority 4 status. Five species have been removed from the Priority flora list as they are more common and widespread than previously thought:

- *Grevillea secunda* (P2 at the time of the PER; currently P4);
- *Olearia arida* (P2 at the time of the PER; currently P4);
- *Dicrastylis cundeeleensis* (P3 at the time of the PER; currently P4);
- *Baeckea* sp. Great Victoria Desert (P2 at the time of the PER; currently de-listed);
- *Dicrastylis nicholasii* (P2 at the time of the PER; currently de-listed);
- *Microcorys macredieana* (P3 at the time of the PER; currently de-listed);
- *Micromyrtus stenocalyx* (P3 at the time of the PER; currently de-listed); and,
- *Lepidobolus deserti* (P4 at the time of the PER; currently de-listed).

In addition to the DEC's Priority species review, the Joint Venture commissioned MBS Environmental (Appendix 3B) to combine the results of the original PER data with additional flora surveys undertaken since the release of the PER (see Section 3.2 below for further details of the surveys). MBS then used this data to recalculate the percentage impacts of for the Project on the Priority species. Table 5.1 presents the results of the MBS re-assessment (Appendix 3B) and includes the removal of the delisted Priority Flora (Appendix 3A). The results presented here supersede the data present in Table 7.3 in the PER. The most significant changes are the reduction in percentage impacts for *Dicrastylis cundeeleensis* (from 46.52 to 26.79%) as well as the removal of several species from the list by the DEC.

Table 5.1: Percentage impacts to conservation significant flora

Species	Status	PER Estimated % Impact	Revised Estimate % Impact
Acacia eremophila numerous nerved variant	P3	11.72	10.03
Acacia eremophila var. *variabilis*	P3	4.90	4.90
Eucalyptus pimpiniana	P3	9.53	9.27
Grevillea secunda	P4	0.13	0.13
Olearia arida	P4	0.67	0.67
Dicrastylis cundeeleensis	P4	46.5	26.79
Comesperma viscidulum	P4	0.05	0.05
Daviesia purpurascens	P4	2.37	2.37
Caesia talinyka ms	New species	0.44	0.44

The increased knowledge on the distribution and abundance of these (and other) species in the GVD is one of the positive contributions to science and conservation arising from the surveys undertaken by the Joint Venture.

5.2. PINJIN INFRASTRUCTURE CORRIDOR FLORA AND VEGETATION

As described in the PER, the Pinjin Infrastructure Corridor is the Joint Venture's preferred option for a Mine Access Road. Flora and vegetation surveys had been undertaken prior to the release of the PER during the summer of 2007 and autumn of 2008. To supplement this work, the Joint Venture commissioned an additional spring survey and genetic analysis of regenerating mallees after the PER was released in 2009:

- Appendix 3C: Spring Field Survey Pinjin Infrastructure Corridor (Mattiske Consulting, November 2009); and,
- Appendix 3D: Genetic analysis of *Eucalyptus articulata* samples (Myrtaceae). II (Botanic Gardens and Parks Authority, November 2009).

5.2.1. Spring Field Survey – Pinjin Corridor and Opportunistic Threatened Flora

One of the recommendations in the original Pinjin Infrastructure Corridor Flora and Vegetation report was to "Conduct future surveys for annual and biennial species following higher seasonal rainfall events, especially in areas affected by the November 2007 fires" (PER Appendix 2-C5). Mattiske Consulting was commissioned by the Joint Venture to conduct a spring survey of the Pinjin Infrastructure Corridor, from the Project's Operational Area to Pinjin Station (Figure 5.1; Appendix 3C). The 2009 spring survey supplements the three surveys of the corridor completed by Mattiske Consulting in December 2007, March 2008 and May 2008 that had formed the basis of PER Appendix 2-C5.

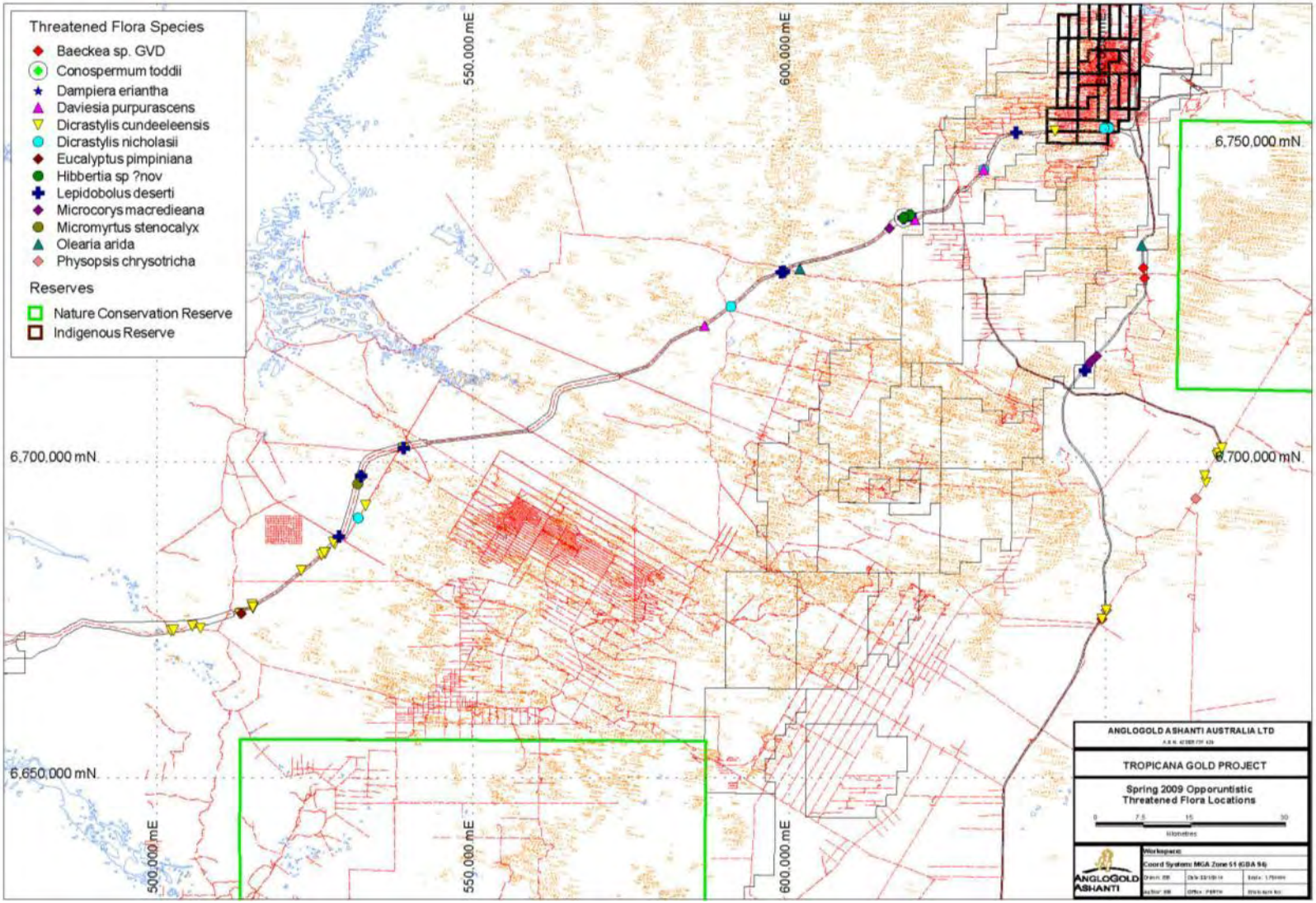


Figure 5.1: Spring flora survey from Pinjin Station to the Operational Area

Eighteen previously unrecorded new annual or biennial species were recorded in the Pinjin Infrastructure Corridor's survey area for the first time in October 2009. This increases the count of annual or biennial species to 26 species. Two of these newly recorded species are Priority species:

- *Dampiera eriantha* (P1); and,
- *Malleostemon* sp. Officer Basin (P1).

Both of these species had previously been recorded in other surveys for the Project (e.g. around the Operational Area) and were recorded outside of the proposed road alignment.

To date, Mattiske Consulting's surveys of the Pinjin Infrastructure Corridor have recorded only one species of DRF and 10 species of Priority Flora surveyed area. These are:

- *Conospermum toddii* (DRF);
- *Dampiera eriantha* (P1);
- *Grevillea secunda* (P4);
- *Malleostemon* sp. Officer Basin (P2);
- *Olearia arida* (P4);
- *Dicrastylis cundeeleensis* (P4);
- *Eucalyptus pimpiniana* (P3);
- *Micromyrtus serrulata* (P3);
- *Thryptomene eremaea* (P2);
- *Comesperma viscidulum* (P4);and
- *Daviesia purpurascens* (P4).

The list presented above differs from the list provided in Appendix 3B and 3C as those reports were produced prior to the DECs Priority Review (Appendix 3A). The above list was correct at the time of publication of this document.

As stated in the PER, the Joint Venture is committed to zero direct impact to DRF within the disturbance footprint of the Mine Access Road, including borrow pits and laydown areas.

5.2.2. Eucalyptus articulata Genetic Analysis

A targeted search for the Declare Rare Flora (DRF) species *Eucalyptus articulata* was undertaken in March and May 2008 along the Pinjin Infrastructure Corridor, as reported in the PER documentation. *Eucalyptus* specimens potentially representing this species were observed to be burnt during the 2008 surveys such that a taxonomic determination based on morphology alone could not determine whether the specimens were *E. articulata*. In 2009, genetic analysis of the specimens was undertaken in the Botanic Gardens and Parks Authority (BGPA). The full results of the genetic analysis were not available at the time of the PER's release, BGPAs original report suggested that more detailed sampling of other Eucalyptus species and the use of additional analysis would be required to confirm the preliminary results available in September 2009. The results of the full analysis are appended to this document (Appendix 3D).

From the genetic assessment, the BGPA confidently concluded that the burnt *Eucalyptus* sampled and assessed did not include *E. articulata*. This conclusion is supported by the limited morphological material provided for voucher specimens, and is supported by the tentative conclusions drawn in the field by Mattiske Consulting staff who undertook the sampling.

5.3. TERRESTRIAL MAMMALS

5.3.1. Sandhill Dunnarts

During the public consultation period, EMB requested that the Joint Venture provide further information regarding habitat availability for the Sandhill Dunnart, undertake an additional field survey to address some concerns about survey methodology and provide additional information regarding the genetic differentiation between Sandhill Dunnarts collected in Western and South Australia. The following additional work regarding Sandhill Dunnarts has been undertaken since the published PER was released in 2009:

- Appendix 3E: Assessment of habitat availability for the Sandhill Dunnart (Churchill, December 2009);
- Appendix 3F: Sandhill Dunnart Spring Field Survey Pinjin Corridor and Adjacent Areas (GHD Pty Ltd et al, November 2009);
- Appendix 3G: Tropicana Gold Project – Sandhill Dunnart Assessment: Additional Information for the Department of Environment and Conservation (Gaikhorst, January 2010); and,
- Appendix 3H: Draft manuscript "Sandhill dunnarts (*Sminthopsis psammophila*) show little differentiation between populations from South Australia and Western Australia" (Spencer et al in press).

The additional habitat assessment and trapping survey confirmed the results presented in the PER.

Assessment of habitat availability for Sandhill Dunnarts

An assessment of potential habitat for the Sandhill Dunnart in the Operational Area and Pinjin Infrastructure Corridor was undertaken by Sue Churchill (specialist wildlife consultant) in 2009 (Appendix 3E). This assessment was commissioned by the Joint Venture in response to uncertainties expressed by the DEC in relation to habitat assessment previously undertaken for the Project's PER. Churchill's work involved comparison of the vegetation associations from known Sandhill Dunnart capture sites in South and Western Australia against current vegetation types within and adjacent to the Project's Operational Area and Pinjin Infrastructure Corridor. The purpose was to independently assess the availability of potentially suitable Sandhill Dunnart habitat within the proposed disturbance areas for the Project. Further comparisons were made using broad-scale vegetation mapping to assess the availability of suitable habitat within the rest of Western Australia.

The potential habitat of the Sandhill Dunnart can broadly be categorised as:

- Prime: Core habitat that is functional and able to meet all the needs of a breeding population. Prime habitat has the highest likelihood of supporting a current population and therefore the highest likelihood of sampling. Note that actual sampling events are rare (that is, a high trap effort is usually required), even in the presumed best areas of habitat in the Great Victoria Desert.
- Likely: Meets the majority of the needs of a breeding population. May contain small, disjunct areas of Prime habitat within a matrix of lower quality habitat. Medium likelihood of successful sampling.
- Marginal: Sandhill Dunnarts may use (and therefore occasionally be sampled in) marginal habitat, but they will not often live in it. Marginal habitat may be used for movement between patches of higher quality habitat, or for foraging if adjacent to appropriate cover or breeding habitat.

The majority of the proposed disturbance footprint within the Operational Area is situated in habitat considered Marginal for Sandhill Dunnarts (Figure 5.2). Churchill's report indicates that there are patches of vegetation that may be Prime or Likely Sandhill Dunnart habitat along the Pinjin Infrastructure Corridor (Figure 5.3). However,

some of these have been severely burned in the last few years making them unsuitable for at least the next decade.

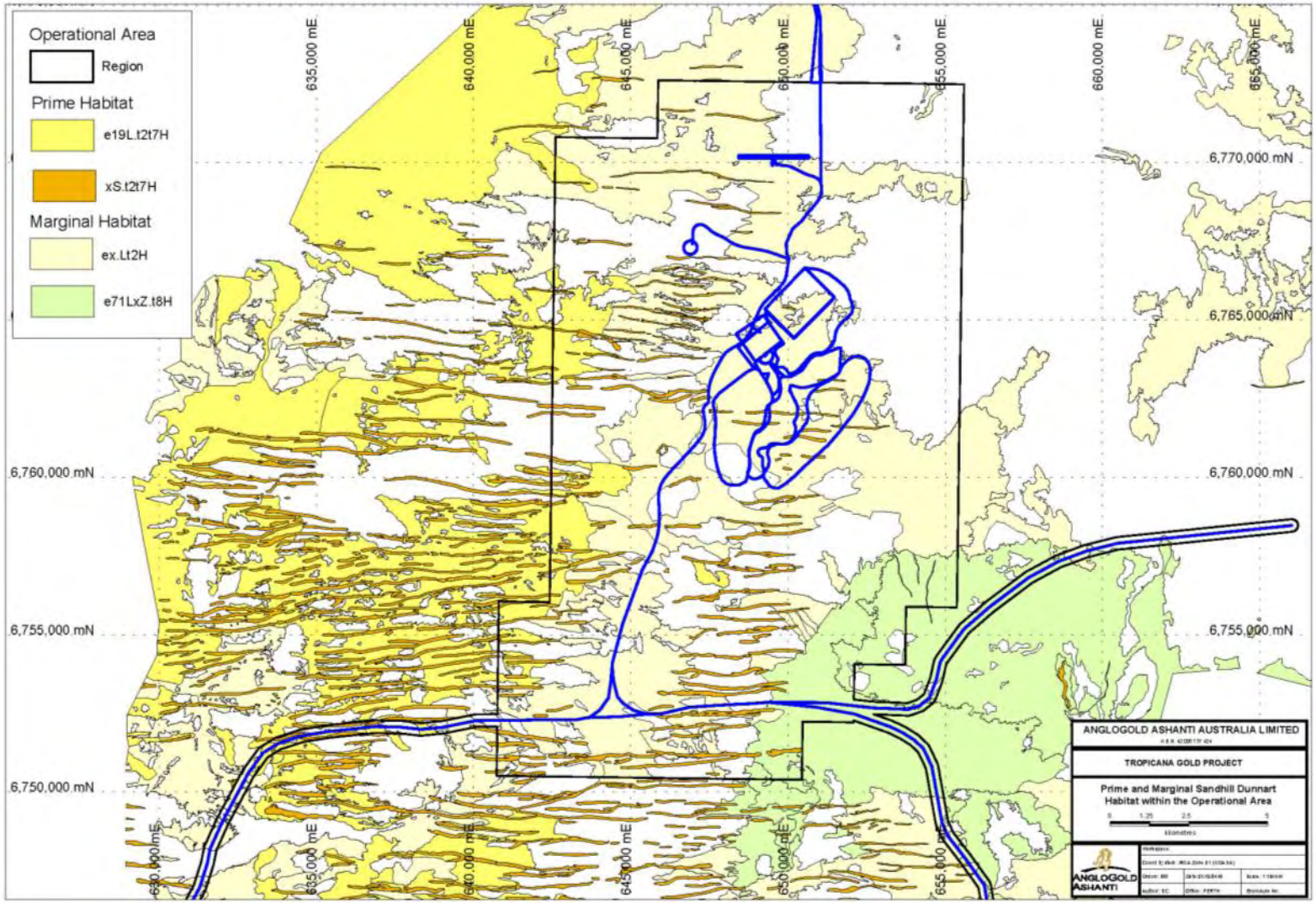


Figure 5.2: Vegetation Communities mapped within the Operational Area likely to be Sandhill Dunnart habitat

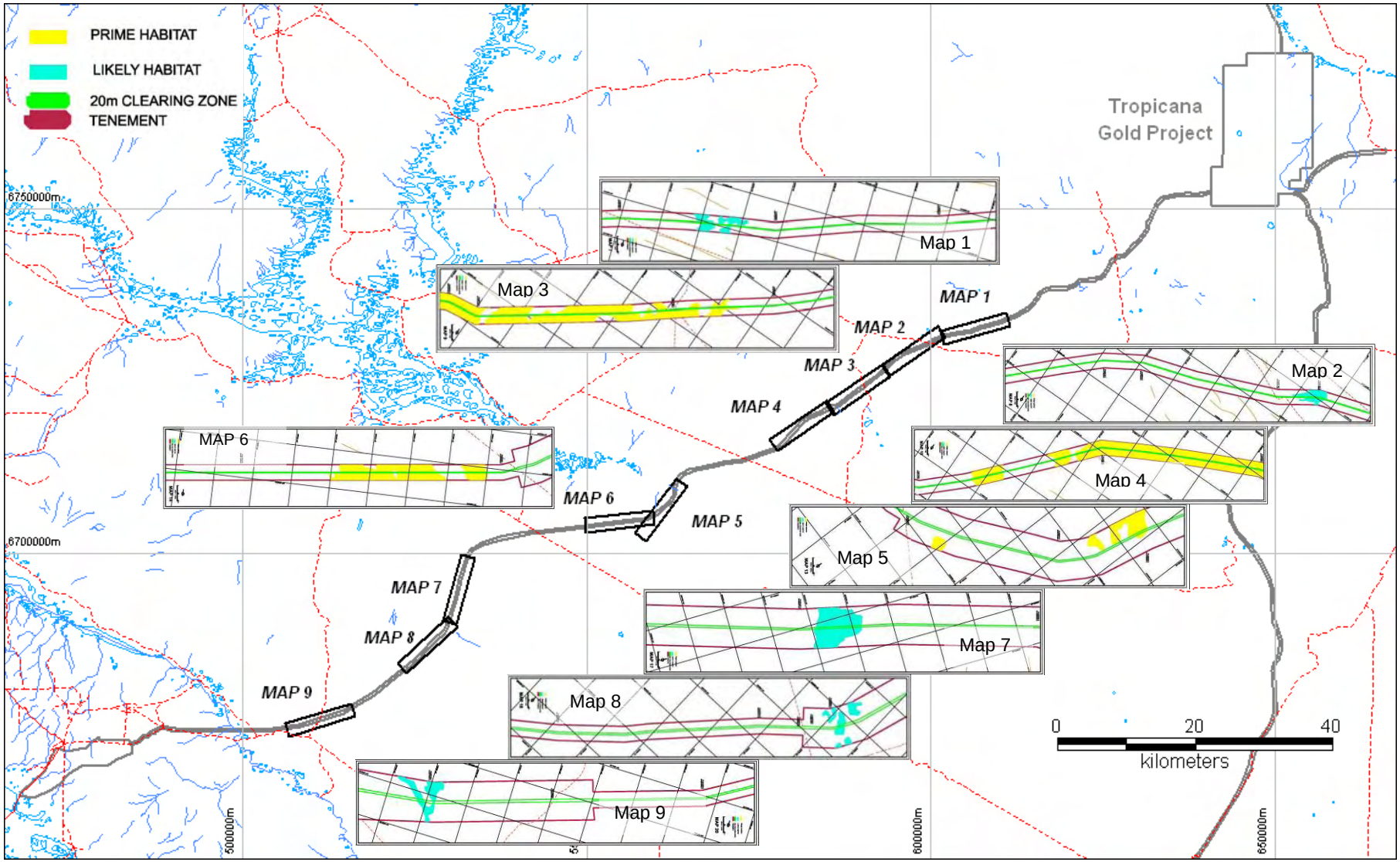


Figure 5.3: Sandhill Dunnart habitat along the Pinjin Infrastructure Corridor

Second Round Sandhill Dunnart Surveys of the Proposed Operational Area and Infrastructure Corridor

Following Churchill's habitat assessment, GHD Pty Ltd (GHD) and Churchill were commissioned to conduct a targeted survey for the Sandhill Dunnart (*Sminthopsis psammophila*) in the Project's Operational Area and parts of the proposed Pinjin Infrastructure Corridor (Figure 5.4; Appendix 3F).

The aims of the survey were to:

- Conduct a trapping regime in spring, an alternative season to all previous surveys that were undertaken in autumn;
- Use independent guidance on the program (using Sue Churchill's knowledge on Sandhill Dunnarts); and,
- Use a modified trapping methodology to fill any irregularities in previous methods (methodology was revised and modified from the original methodology used by Gaikhorst and Lambert [2009; Appendix 2-F1 of the PER] in the previous Sandhill Dunnart surveys in line with recommendations from the DEC).

A 10 day trapping program was conducted from 16 - 26 November 2009 with the team being led by Glen Gaikhorst and Sue Churchill.

No Sandhill Dunnarts were captured in the 3,510 trap nights (910 pit nights and 2,600 Elliott nights) across 14 trapping sites. This survey increased the total trapping nights for all Sandhill Dunnart surveys in the area to 5,856 and provides further assurance to the Joint Venture that Sandhill Dunnarts are currently absent from the area in and around the proposed disturbance footprint of the Project.

Three targeted trapping surveys have now been undertaken in the Project's Operational Area and along the Pinjin Infrastructure Corridor with no Sandhill Dunnarts captured. The majority of habitat within the Operational Area is considered Marginal and likely to be rarely used by the species. Areas along the proposed Pinjin Infrastructure Corridor have more suitable habitat and therefore have a higher potential to be used by Sandhill Dunnarts at the present time. The proposed alignment will minimise disturbance to potential Sandhill Dunnart habitat and is therefore unlikely to have a significant impact on any Sandhill Dunnart populations that may use the area.

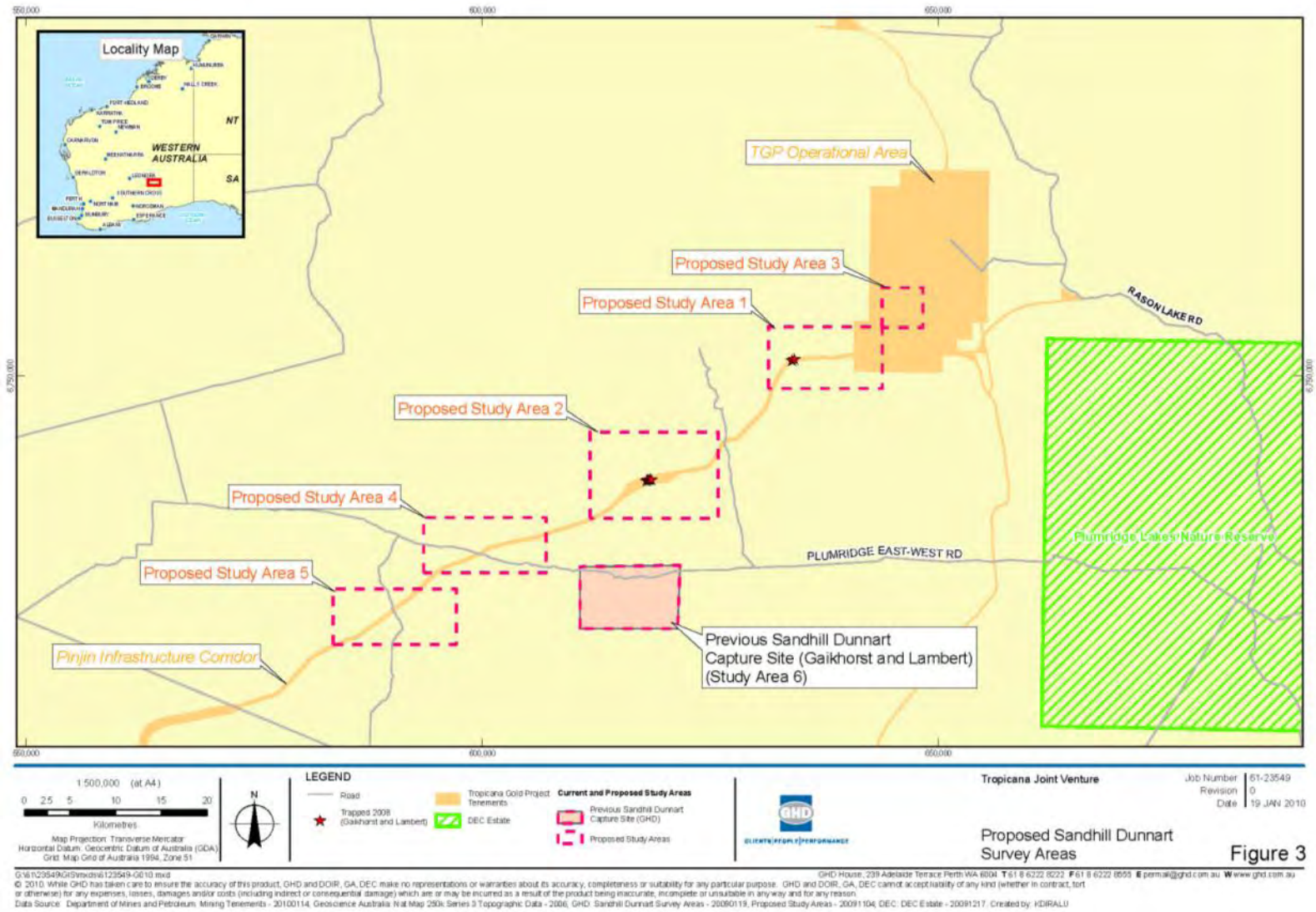


Figure 5.4: Second round survey area for the Sandhill Dunnart

Tropicana Gold Project – Sandhill Dunnart Assessment: Additional Information for DEC

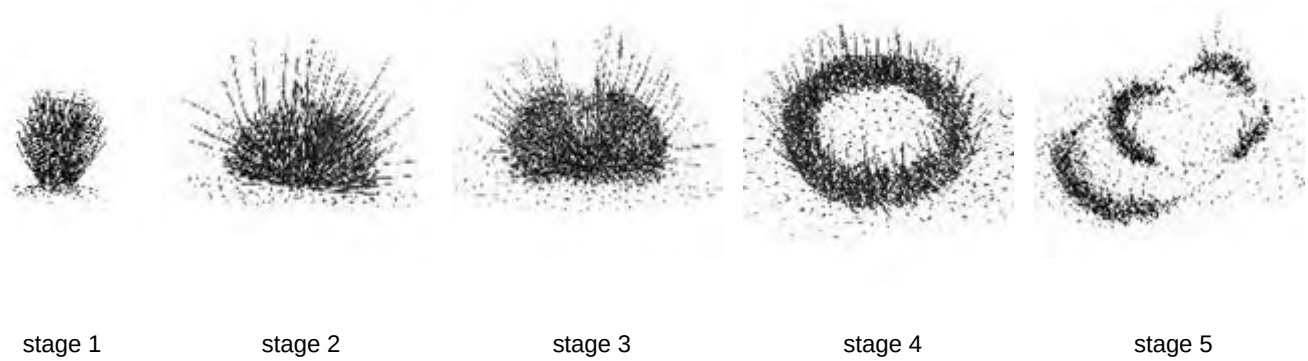
Additional information was sought by Environment Management Branch of the DEC on a variety of topics regarding Sandhill Dunnarts as discussed in more detail in Gaikhorst (2009; Appendix 3G of this document).

Gaikhorst and Lambert (2008; Appendix 2-F1 of the PER) discussed habitat types of areas where Sandhill Dunnarts had previously been captured by the consultants in the GVD, however the difference between their definition of "prime" and "sub-prime" habitat was not made clear. On 26 October 2009, DEC staff, Joint Venture representatives and consultants (including Sue Churchill) discussed prime versus sub-prime habitats at a meeting with the following outcomes:

- Prime habitats in Western Australia's yellow soil plateau of the GVD:
  - The most important factor appears to be *Triodia* quality – approximately 70 - 100 cm in diameter and within life stages 2-3.5 (Figure 5.5).
  - The percentage of *Triodia* cover ranges between 10 – 70 % at capture sites.
  - Factors influencing the quality of spinifex in an area are fire, rainfall, disturbance and it's positioning in the landscape.
  - Association with sand dune systems which are usually yellow or yellow/ orange in colour. Sand dune systems tend to be a sandy substrate while red soils have higher clay and rock content (often with Mulga associations) which are not the typical habitat types of the Sandhill Dunnart.
  - Particular plant species (other than *Triodia*) do not appear to be important to the Sandhill Dunnart in Western Australia, rather it is the cover that plants provide that is significant.
- Sub-prime Habitats in the GVD:
  - Burnt areas with no remaining mosaic pattern of remnant patterns in which animals can persist.
  - Red soil plains, tending to support Mulga.

DEC also requested additional information on the vegetation structure, canopy cover, information on the *Triodia* species present and percentage cover at the 2008 survey sites. This has been provided in Appendix 3G.

Since the beginning of 2008, three field trips have been conducted to specifically target Sandhill Dunnart in and around the Project's Operational Area and along the Pinjin Infrastructure Corridor. No Sandhill Dunnarts have been captured and no signs of their presence have been observed to date. In total, 28 quadrats have been set up, comprising of 5,856 trap nights over two seasons (March/May and November). In previous studies Sue Churchill captured approximately one animal per 1,000 trap nights in South Australia, while Gaikhorst and Lambert have captured approximately one animal per 1,500 trap nights in their own private research in Western Australia's GVD. It is therefore likely that, considering the number of trap night conducted, approximately four to six Sandhill Dunnarts could have been recorded across the combined survey periods if an active population was present.



stage 1 stage 2 stage 3 stage 4 stage 5

Figure 5.5: Life stages of spinifex (sketches by V Reynolds)

Draft Manuscript: Sandhill Dunnarts (*Sminthopsis psammophila*) show little differentiation between populations from South Australia and Western Australia (Appendix 3H of this document)

The results of this work indicate that the Sandhill Dunnart once had a continuous distribution between South Australia and Western Australia. Therefore, it is possible that the Sandhill Dunnart persists in areas that are currently classed as sub optimal. If this was the case, and there is a reasonably sized population in the area, the current trapping regime would be expected to detect Sandhill Dunnarts. It can be reasonably concluded that the species is either in very low numbers in this region or is locally extinct.

5.3.2. Marsupial Moles

In November 2009 following a request from EMB, Joe Benshemesh (Specialist Zoologist) was commissioned to provide a professional opinion on the potential effects of the Project on Marsupial Moles in regard to the possibility of fragmentation of a local population (Appendix 3I). Benshemesh considers that it is unlikely that the loss of individual Marsupial Moles caused by the Project will significantly impact the larger population. Even though the dunefields south of Lake Rason are not obviously connected to the rest of the GVD dunefields (Figures 5.6 and 5.7) and therefore may represent a sub-population of Marsupial Moles, the available habitat south of Lake Rason is nonetheless substantial (estimated at about 14,000 km of dune; Appendix 2-F2 of the PER). The 15 km of dune that may be taken by the Project represents less than 0.1% of the available habitat south of Lake Rason. Benshemesh considers it unlikely that a change in population size of this scale would jeopardise the conservation of the species either locally in the surrounding area or more globally.

Benshemesh also considers that the loss of habitat directly attributable to the Project is unlikely to result in a significant impact on the conservation of Marsupial Moles in the surrounding areas. While habitat links are likely to be of great importance in some areas, there is nothing to suggest that the dunes located within the proposed disturbance footprint of the Operational Area provides a critical habitat corridor for the movement of Marsupial Moles into surrounding areas and populations (Figures 5.6 and 5.7). Thus, it is unlikely that the removal of the dunes from within the footprint will result in significant impact on the Marsupial Mole population beyond those associated with the potential loss of individuals from the local area.

The construction and operation of the Mine Access Road (via the Pinjin Infrastructure Corridor) may have short and long term affects on Marsupial Mole populations. However, Benshemesh considers that these affects are unlikely to compromise the conservation of the Marsupial Mole population(s) in the region.

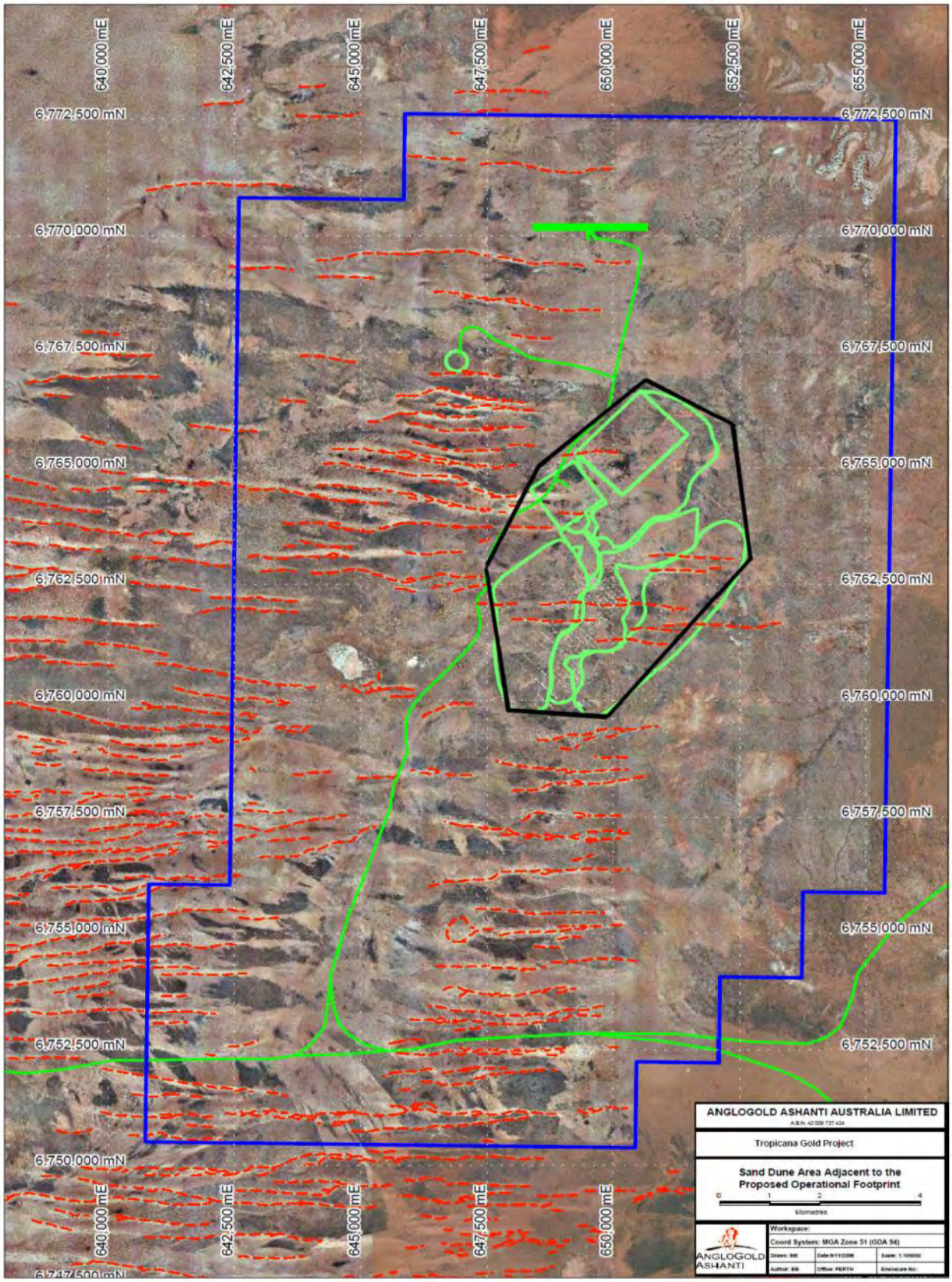


Figure 5.6: Habitat availability (red dash lines) for the Marsupial Mole within the Operational Area

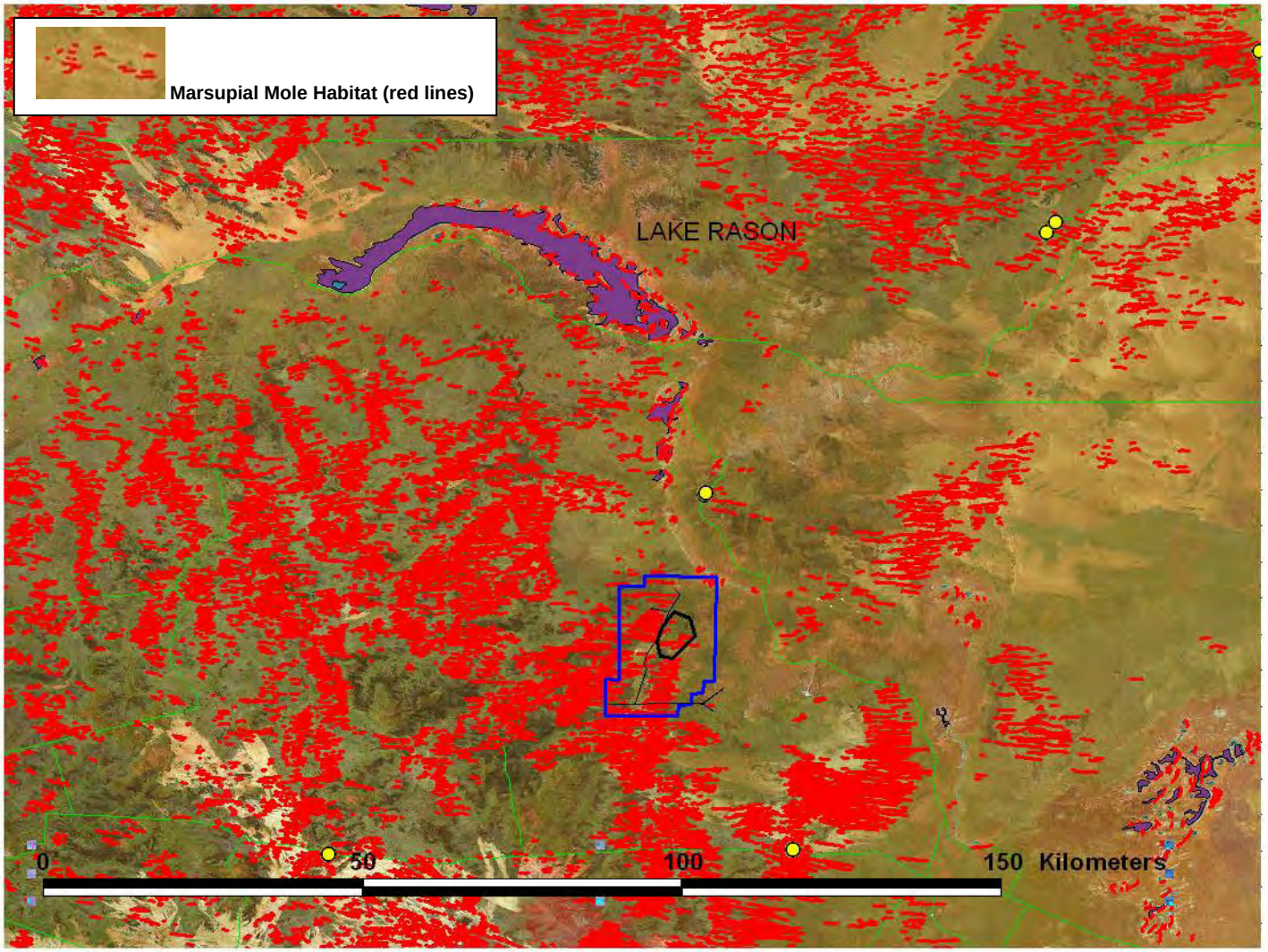


Figure 5.7: Habitat availability for the Marsupial Mole

5.4. TERRESTRIAL INVERTEBRATES (POTENTIAL SHORT RANGE ENDEMICS)

Despite the extensive survey effort dedicated to short range endemic (SRE) invertebrates prior to the PERs publication, the Joint Venture and its consultants had been unable to identify a sampling location for one potential SRE species outside of the disturbance footprint. After the publication of the PER, *ecologia* Environment (*ecologia*) was commissioned to conduct further surveys for short range endemic (SRE) invertebrates in the proposed Operational Area (Appendix 3J). The targets of this survey were Mygalomorph spiders. Trapping conducted in 2006 and 2008 and foraging conducted in 2009 located all but one species outside the Operational Area footprint (*Kwonkan* sp. 2; see Appendices 2-B4, B4a and B4b of the PER). During the public consultation period, the EMB requested that further information be provided regarding the habitat preference of *Kwonkan* sp. 2 and *Aganippe* sp. 4 which had been located within 800 m of the Operational Area's disturbance footprint, and therefore may be exposed to indirect impact from the Project. As described in the PER, direct impacts to the only known sampling location of *Aganippe* sp.4 have been avoided by modifying the footprint of one of the waste material landforms.

In addition to the work presented in the PER, further work was conducted with the aim of collecting *Kwonkan* sp. 2 and *Aganippe* sp.4 and mapping the distribution of potential habitat. This work focused on mapping their geographic distribution within and around the Operational Area and defining their preferred habitat in order to describe their potential distribution outside of the disturbance footprint.

A broadened DNA study of the genera *Aganippe* and *Anidiops* was also conducted using the mitochondrial gene for cytochrome c oxidase 1 (COI) in order to describe their phylogenetic relationships.

5.4.1. Habitat Assessment

Kwonkan sp. 2

Despite repeated efforts during the trapping survey in 2008 and foraging surveys in March, May and September 2009, no *Kwonkan* sp. 2 specimens could be located. The following summary is based on literature, information from Professor B.Y. Main, habitat assessment and similarities with other Mygalomorph species found within the Operational Area.

There are currently six described species of Kwonkan in Australia: *K. wonganensis*, *K.anatolion, K. eboracum, K. goongarriensis, K. moriartii*, and *K. silvestris* (Main 1983). Only *K. wonganensis* prefers open ground of pebbly loam soils. The remaining species are found in loamy to sandy soils within the leaf litter of open eucalypt woodlands or heath (Main 1983). Only a handful of *Kwonkan* burrows have been recorded in Western Australia due to their extremely cryptic nature (B. Y. Main, pers. comm.).

The site where the *Kwonkan sp. 2* was collected in 2006 is located within the larger vegetation unit of low *Acacia aneura* woodland (Beard 1975). On a small scale, three habitat types were identified as being potentially suitable for *Kwonkan* sp. 2:

- sandy, eucalypts;
- sandy, acacias; and,
- sandy, she-oak and eucalypts.

Two of these habitat types occurred both inside and outside the disturbance footprint and one only occurs outside the footprint (see Appendix 3J for the distribution of these habitat types). None of these habitats were classified as 'island habitats' (isolated from similar types of soil and vegetation by environment deemed inhospitable to the

species). Transects walked from the original sampling site in a north-easterly, easterly, and south-easterly direction across the proposed eastern waste landform and out of the proposed footprint, showed that pockets of these habitats extend a minimum of six kilometres beyond the impact area.

The habitats identified were fully overlapping with the habitat of *Kwonkan* sp. 1 and partially overlapping with habitats of *Aganippe* sp. 2/7 and a new species, *Swolnpes darwini*. Given this similarity, the spatial distribution of *Kwonkan* sp. 2 is most likely to follow the same patterns as those of *Kwonkan* sp. 1, *Aganippe* sp. 2/7 and *Swolnpes darwini*. It was therefore deemed likely that *Kwonkan* sp. 2 will be only partially impacted by the proposed Project, and that this impact is not likely to have a significant impact on the species.

Based on the DNA results, the recorded low genetic diversity of both *Aganippe* sp. 1/8 (0.0-0.3%) and *Aganippe* sp. 2/7 (0.0-1.7%) within this area provides evidence that no barriers to dispersal exist across these habitat pockets and that the individual spiders belong to a larger population extending over a minimum of several kilometres beyond the proposed Operational Area footprint. It is reasonable to assume that the population of *Kwonkan sp. 2* in the area is subject to the same natural conditions and follows the same patterns of distribution and dispersal, both inside and outside the proposed disturbance footprint. This proposition is supported by the data on the geographic distribution of another species from the family Nemesidae, *Swolnpes darwini* gen. nov. sp. nov. (B.Y. Main, pers. comm. 2009) found at the Operational Area in 2008. This species prefers pockets of habitat with open Casuarina woodland and inhabits areas outside the disturbance footprint that extends over at least twelve kilometres.

In summary, the targeted survey of the habitat preferred by *Kwonkan* sp. 2 suggests that the species is not restricted to the proposed disturbance footprint. The population of *Kwonkan* sp. 2 is only expected to be partially impacted by the proposed Project. This impact is unlikely to be significant to the species.

***Aganippe* sp. 4**

The original collection of *Aganippe* sp. 4 was, at the time (2006), located within the proposed disturbance footprint. During 2009, the footprint of the western waste landform was modified to provide an 800 m buffer between the footprint and the original sampling location. As a result, *Aganippe* sp. 4 is no longer directly impacted by the Project. Given the proximity of the sampling site to the waste landform (after modification of the footprint) and the proposed Mine Access Road, the DEC recommended that an additional habitat assessment should be conducted to identify additional areas of preferred habitat away from the impact footprint in case the original sampling site is indirectly impacted by the Project.

The site lies within a low *Acacia aneura* (mulga) woodland vegetation unit (Beard 1975). On a small scale, twig-lined Idiopidae burrows (currently identified as *Anidiops* sp., although genetically closer to *Aganippe* (refer to Appendix 3J) were located within pockets of *Acacia aneura* thickets with loamy to sandy soils, surrounded by open woodland and/ or low sand dunes. In order to ensure that the habitat of *Aganipp*e sp. 4 was available further away from the impact area, transects were walked west and north-west from the site where it was originally recorded. The results showed that the habitat extended a minimum of two kilometres beyond the disturbance footprint.

***Aganippe* sp. 1/8**

Seven specimens of *Aganippe* sp. 1/8 were collected from four sites in 2009, one of which was near the original (2006) sampling site inside the proposed Operational Area footprint and three were located outside. On a small scale the specimens were associated with the following two habitat types:

- loamy open ground, spinifex and acacia; and,

- loamy open ground, she-oak and acacia.

Transects walked from the original sampling site in an easterly and north-easterly direction across the proposed eastern waste landform and out of the proposed Operational Area footprint showed that these pocket habitats extend a minimum of six kilometres beyond proposed footprint.

***Aganippe* sp. 2/7**

Aganippe sp. 2/7 was not one of the target species of the survey; however, data on its distribution and genetic divergence were compiled in order to enable comparison with the target species. Twelve specimens of *Aganippe* sp. 2/7 were collected in 2009 both inside and outside the proposed disturbance footprint. The species was associated with the following habitat type pockets:

- sandy, eucalypts and acacias;
- sandy, she-oak and acacias;
- loamy open ground, she-oak and acacia; and,
- loamy, acacia.

Transects walked within and outside the proposed Operational Area footprint showed that these pocket habitats extended a minimum of twelve kilometres beyond the footprint.

The comparison of specimens collected along the Laverton track north of the Lake Rason palaeodrainage and the group of specimens collected south of the palaeodrainage revealed a split of approximately 7-8% of genetic divergence, contrasting with the 0.0-1.7% divergence within each group (see Section 3.3.2). This suggests that the two groups separated by the drainage belong to two separate populations.

5.5. SUBTERRANEAN FAUNA

5.5.1. Biodiversity of the two-pronged bristletails (Diplura) in WA

Surveys were carried out by *ecologia* on behalf of the Joint Venture to assess whether or not subterranean fauna occurred within the Operational Area. These surveys revealed the presence of three previously unknown species, one of which belongs to the group Diplura (the two-pronged bristle-tails). To identify any links between the Diplura located within the Operational Area and elsewhere in Western Australia, the Joint Venture sponsored Dr Markus Koch to describe and understand the taxonomy of bristle-tail Diplura recorded within the Operational Area and other specimens found in arid and semi-arid regions of Western Australia (Appendix 3K). This additional work was not requested by any stakeholder during the public consultation period, the Joint Venture choose to take advantage of Dr Koch's availability in the interests of increasing the knowledge base for Troglofauna in Western Australia.

The two-pronged bristle-tails are a group of ancient six-legged arthropod species thought to be the closest living relatives to modern terrestrial insects (Koch 2000). While these species have shown a global distribution across previous environmental surveys, the majority of discoveries have occurred primarily in tropical and sub-tropical environments (Humphreys et al. 2006). Recent observations, including those by *ecologia* for the Joint Venture, suggest potentially greater species diversity throughout arid and semi-arid environments, particularly within Western Australia where eleven distinct species have been identified (Humphreys 2000).

The survey carried out for the Joint Venture returned a single specimen of Diplura belonging to the family group Japygidae, one of the most diverse of Dilpura groups (Appendix 3K). The distinct markings and trunk formation of

the specimen collected did not match any currently known members of this family, suggesting the likelihood of a species new to science, although closely related to species found through the Pilbara and Kimberly regions.

An examination of specimens held at the Western Australian Museum provided additional support of both the uniqueness of the identified specimen and the greater biodiversity of Diplura in arid and semi-arid environments than previously recognised. The conclusions made by Koch suggest a broader distribution of the Diplura and similar subterranean fauna than previously thought.

5.5.2. Supplementary Troglofauna Report

At the time of the PER's publication five rounds of Troglofauna sampling had been completed and a sixth round was underway. The survey results for the sixth round were not available for release with the PER (the sixth round of traps were still *in situ*). Following the sixth phase of work *ecologia* carried out a seventh phase of sampling for Troglofauna across the proposed disturbance footprint and wider Operational Area. Since the PER's publication, the sixth and seventh rounds of sampling have been completed. During the public consultation period, EMB requested additional information on the availability of Troglofauna habitat across the Operational Footprint. The Joint Venture commissioned *ecologia* and Louisa Lawrence to carry out this additional work. Appendix 3L of this document contains a summary of all Troglofauna sampling completed and a description of potential Troglofauna habitat and its distribution across the Operational footprint and beyond. The timeframes and number of survey holes used for each phase are listed below:

- Phase 1: September 2007 – November 2007: 40 holes;
- Phase 2: June 2008: 100 holes;
- Phase 3: August – October 2008: 43 holes, 42 recovered;
- Phase 4: October – December 2008: 50 holes, 26 recovered;
- Phase 5: April – May 2009: 157 holes, 109 recovered;
- Post-PER Phase 6: August - September 2009: 50 holes, 29 recovered; and,
- Post-PER Phase 7: November 2009 - January 2010: 85 holes, 65 recovered.

The overall sample size for the first five phases that formed the basis of the PER was a total of 317 survey holes, of which 108 were located within the proposed mining and infrastructure footprint. The results from the initial five phases of survey (as presented in the PER) indicated that three distinctive species of Troglofauna were located across the survey area, these species belonging to the groups Diplura (bristeltails), Chilopoda (centipedes) and Isopoda (slaters). Of these three species only the slater was located inside and outside of the disturbance footprint, while both centipede and bristletail were only identified within the footprint. Following the release of the PER, the sixth phase of trapping did not result in any troglobitic fauna. The seventh phase resulted in the capture of a fourth species of Troglofauna - a cockroach (Blattodea), as well as the slater recorded in previous phases. In total across the seven phases, 411 drill holes have been sampled, resulting in the capture of fourteen troglobitic specimens across four species. One of the species has been confirmed inside and outside of the disturbance footprint (isopod), one species has been recorded only outside the footprint (cockroach), and two species have only been located within the footprint (bristletail and the centipede).

Description of potential Troglofauna habitat was required to describe the possible distribution of all four species across the area. Regolith data was collated for each drill hole that had returned a Troglofauna record and at least one regolith strata was identified per hole that contained pores or voids potentially suitable for troglofauna habitation. Strata such as channel-fill sediment, and various gravels and calcretes were common. Regolith and geological information from exploration drill holes were assessed across 14 areas, this information was used to compile a series of regolith cross sections and to describe the distribution of potential habitat across the

disturbance footprint and the surrounding area. One example of these cross sections is provided in Figure 5.8 and the location of each cross section is shown in Figure 5.9. Of all strata types identified, channel-fill sediment was identified as the "prime" habitat for all Troglofauna species, due to the porosity, depth (10-30m bgl – i.e. above the water table) and its immediate contact (above and below) with other strata that could potentially form Trogolofauna habitat (e.g. gravel and other porous strata). Lateral connectivity across the cross sections along strips of prime habitat strata appears likely. This connectivity may be supplemented by 'bridges' of other suitable strata (e.g. gravels) that lie directly adjacent to the 'prime' habitat that could enable movement from one stratum to another. In Figure 5.8 the grey dashed stratum is the 'prime' channel-silled sediment, and it is directy adjacent to potential 'bridge' strata including coarse gravel (directly above the 'prime habitat at the western end of the cross section).

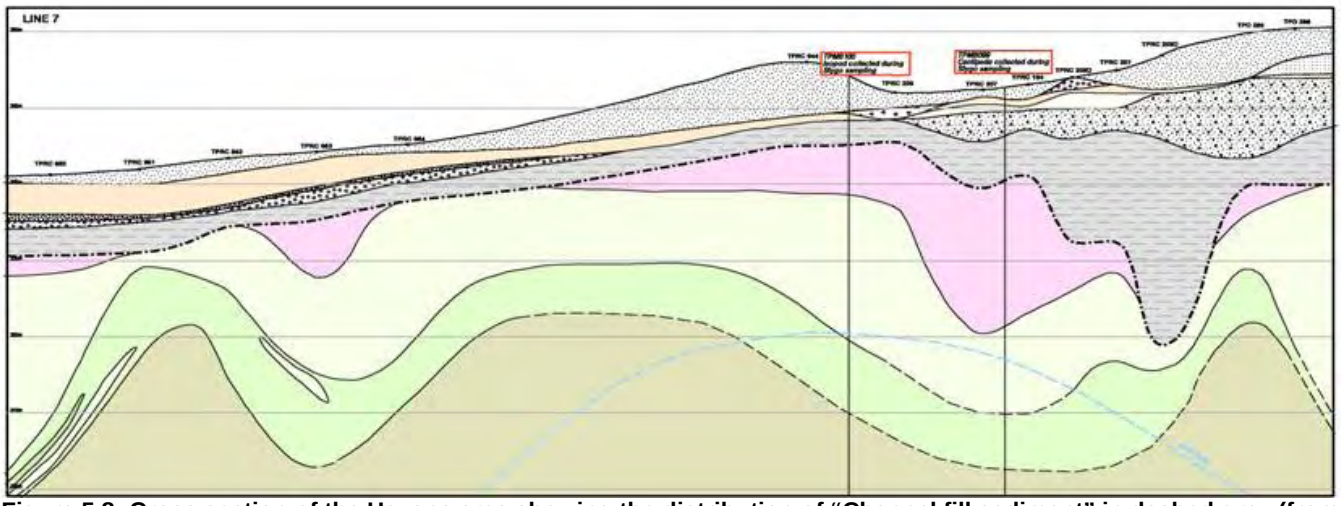
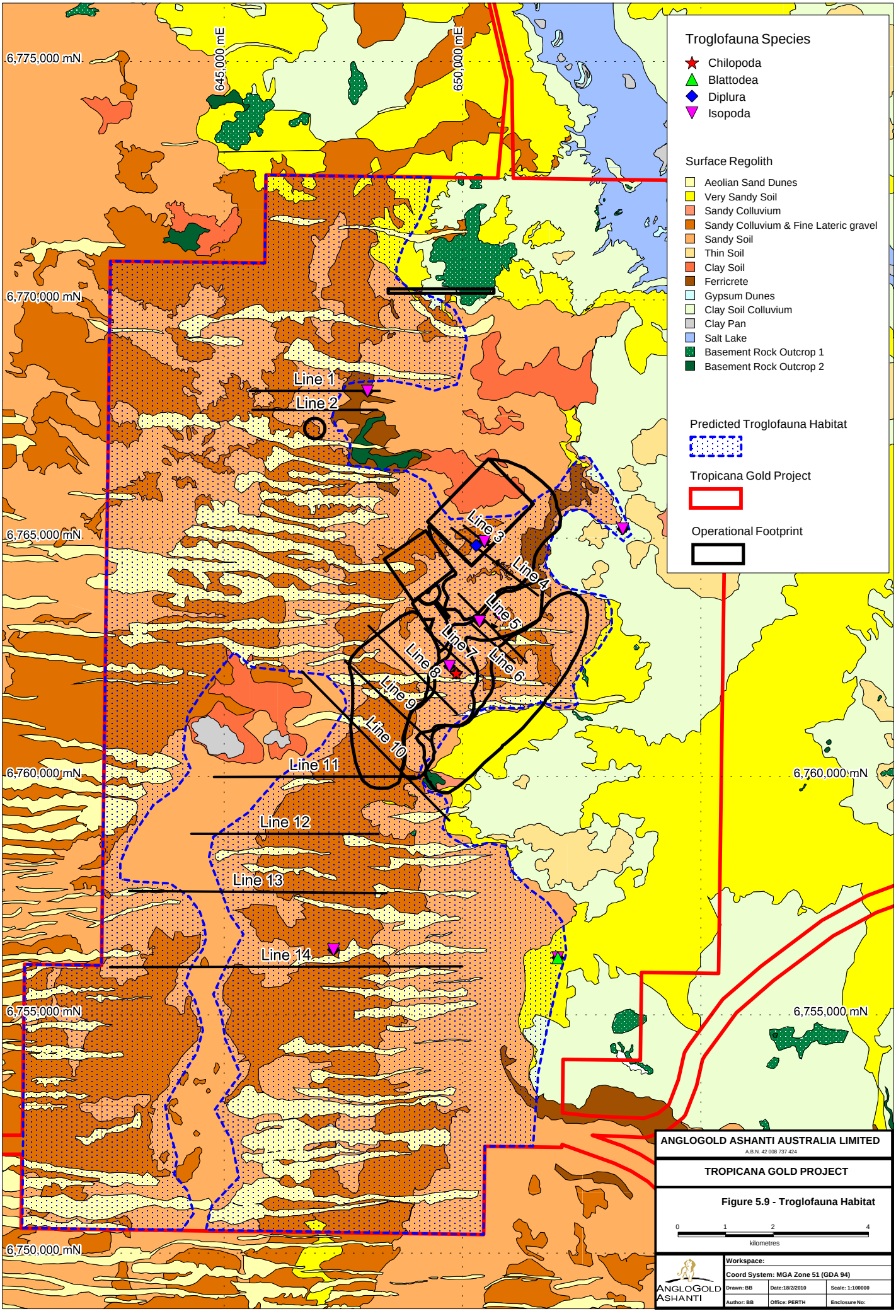


Figure 5.8: Cross section of the Havana area showing the distribution of "Channel fill sediment" in dashed grey (from Appendix 3L)


6,775,000 mN
6,770,000 mN
6,765,000 mN
6,760,000 mN
6,755,000 mN
6,750,000 mN
645,000 mE
650,000 mE
Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8
Line 9
Line 10
Line 11
Line 12
Line 13
Line 14
Troglofauna Species
Chilopoda
Blattodea
Diplura
Isopoda
Surface Regolith
Aeolian Sand Dunes
Very Sandy Soil
Sandy Colluvium
Sandy Colluvium & Fine Lateric gravel
Sandy Soil
Thin Soil
Clay Soil
Ferricrete
Gypsum Dunes
Clay Soil Colluvium
Clay Pan
Salt Lake
Basement Rock Outcrop 1
Basement Rock Outcrop 2
Predicted Troglofauna Habitat
Tropicana Gold Project
Operational Footprint
ANGLOGOLD ASHANTI AUSTRALIA LIMITED
A.B.N. 42 008 737 424
TROPICANA GOLD PROJECT
Figure 5.9 - Troglofauna Habitat
0 1 2 4
kilometres
ANGLOGOLD ASHANTI
Workspace:
Coord System: MGA Zone 51 (GDA 94)
Drawn: BB
Date:18/2/2010
Scale: 1:100000
Author: BB
Office: PERTH
Enclosure No:

As a result of this habitat assessment *ecologia* suggested that the Troglofauna community was likely to have a distribution that extends beyond the Operational footprint. This conclusion is based on:

- the idenitification of “prime” and “likely” habitat strata both within and outside of disturbance footprint;
- the presence of different potential strata habitats at each survey hole (‘prime’ and ‘likely’); and,
- the distribution of prey species such as the slater and cockroach outside of the footprint.

As the dipluran and centipede are predatory species they may be expected to persist at lower densities than the prey species, and thus are more difficult to locate.

6. CLARIFICATIONS FROM THE PUBLIC ENVIRONMENTAL REVIEW DOCUMENTATION

6.1. INDIGENOUS CONSULTATION

In the PER, Figure 4.2 Indigenous Agency (21%) was mislabelled as Department of Indigenous Affairs. The 21% incorporated consultation the Joint Venture has undertaken with various Indigenous agencies such as North East Independent Body, ICC, NOODA, Central Desert Native Title Service, Department of Indigenous Affairs, Goldfields Land and Sea Council, and public information sessions attended by Indigenous agency representatives. This figure has been corrected and is presented below in Figure 6.1.

The 6% of consultation regarding "Native Title Rep Body" is specific to Native Title discussions only.

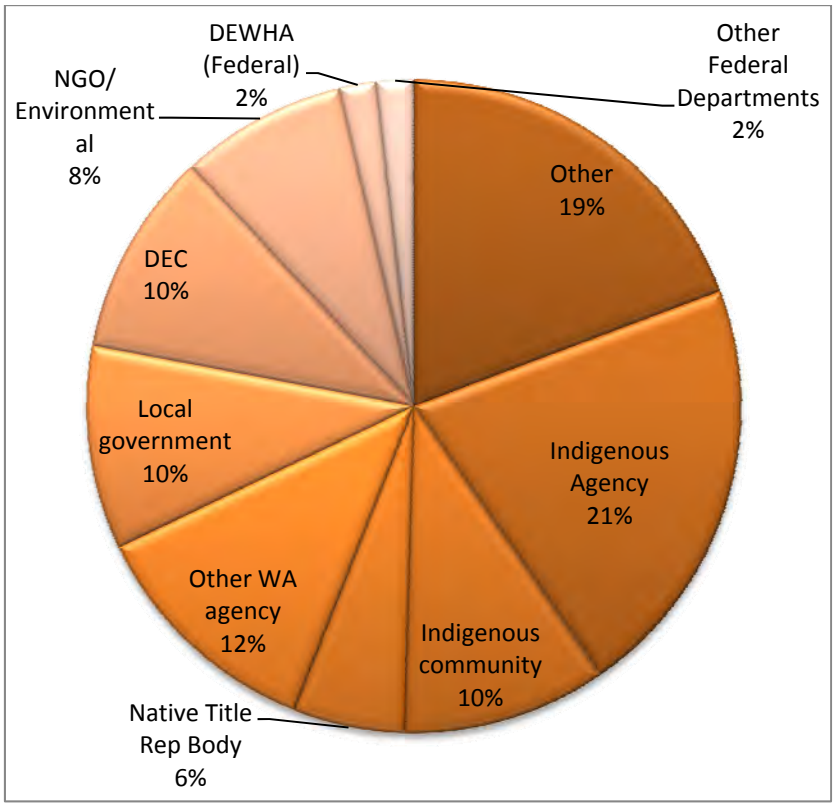


Figure 6.1: Revised Figure 4.2 from the PER with correct labelling of 'Indigenous Agency'

6.2. LECHENAULTIA DIVARICATA

Section 6.2.7 of the PER indicated that *Lechenaultia divaricata* had been identified in surveys for the Joint Venture (PER page 6-30). A review of the *ecologia* Environment Operational Area Vegetation and Flora assessment report (PER Appendix 2-B6) has found that this is incorrect. The species had previously been recorded by *ecologia* Environment in a 2005 survey adjacent to the Plumridge Lakes Nature Reserve. This species is know from the wider region, but was not observed during any of the Project baseline surveys.

6.3. BOTANICAL SURVEYS AND VEGETATION EXTRAPOLATION

The Joint Venture met with EMB on 26 October 2009 to discuss the Project's flora and vegetation surveys. In the meeting, EMB requested further information regarding:

- further explanation of the extrapolation methodology used by the consultants, in particular Botanica's survey of the proposed Minigwal borefield area;
- further information on population estimation methods from the AngloGold, Mattiske and *ecologia* surveys; and,
- further explanation of MBS calculations.

Methodology	Results	Consultant comment
Regional Survey carried out by AngloGold Ashanti Australia (PER Appendix 2-F6)		
Three survey areas: • Foot traverses of preferred habitat and other areas including along tracks. • Population size was estimated on site (not extrapolated from cover).	Tables 5 – 7 detail the number of populations and plants recorded in each survey area Table 8 provides the total number of populations and plants for each species across all survey areas.	All numbers of Priority/ DRF species in the impact area were estimated from eyeballing the population (not by extrapolating from the vegetation community or some other method). It is likely that other plants were present in the areas but not counted/ observed due to the surveys licence conditions to remain close to existing tracks (Ana Storey pers. comm. 13 November 2009).
Pinjin Corridor survey carried out by Mattiske (PER Appendix 2-C5, including Appendix 2-F8)		
Main survey • 50x50 m quadrats • Opportunistic collections • The number of plants of DRF, Priority and unknown species were recorded at each observation.	Table 4 shows the number and location of *C. toddii* recorded Tables 5 – 18 show the number and location of Priority species recorded.	All numbers of Priority/ DRF species in the impact area were estimated from eyeballing the population (not by extrapolating from the vegetation community or some other method). Tables 5 – 18 imply that at least one plant of each recorded species was observed at each location. It is likely that other plants were present in the corridor but not counted/ observed at the time of the survey due to the extent of the survey area.
Additional Survey • Number and location of Priority/ DRF species was recorded in search areas surrounding the Project.	Page F13 shows the estimated number of each Priority/ DRF species recorded.	
Operational Area survey carried out by *ecologia* (PER Appendix 2-B6)		
• 204 20 x 20 m quadrats (some were sampled on more than one occasion) • Targeted collections for Priority/ DRF species (e.g. targeted to preferred substrate/ habitat of DRF species). • Opportunistic collections.	Table 6.4 describes the number of locations and approximate total number of plants for each DRF/ Priority species. Appendix D of that document presents estimated numbers. Table 7.2 shows percentage impact for Priority/ DRF species.	All numbers of Priority/ DRF species in the impact area were estimated from eyeballing the population (not by extrapolating from the vegetation community or some other method). Estimates based on extrapolation from cover: Number estimates were derived after the survey for quadrats data, based on the percentage cover estimates that were made at the time. This translation of a percent cover estimate to a number estimate took into account the typical stature of the each species (e.g. larger shrubs such as *Baeckea* sp.

Methodology	Results	Consultant comment
• Within the impact footprint, individual Priority and DRF were counted (or estimated in the case of large populations) at the time of the survey. • Some records in more remote locations (i.e. outside of the impact footprint) were derived from estimates. In these instances only cover estimates were made at the time of the survey, and the full extent of the Priority/ DRF population was not counted.		Great Victoria Desert provides a greater % cover per plant than a smaller plant such as *Lepidobolus desertii*) and hence the fact that a smaller number of large plants will provide the same percentage cover as a larger number of small plants. The subsequent targeted flora surveys counted or estimated plant numbers in the field rather than afterwards. Because of the greater intensity of survey and hence greater number of rare flora recorded within the impact area, and the fact that there has been no extrapolation of additional plant populations on the basis of vegetation types, the percentage impact is almost certainly an overestimate.
Tropicana-Transline Corridor survey carried out by *ecologia* (PER Appendix 2-C2)		
• 114 20 x 2 0m quadrats • 59 transects of variable lengths • Opportunistic collections	Page 25 and onwards describes the number of times that a listed taxon was recorded (e.g. *Dampiera eriantha* was recorded in two quadrats, on one transect and twice opportunistically) but does not describe the number of plants recorded on each occasion Section 6 – Conservation Significance: Discusses the number of times a species was recorded in comparison to the number of records from FloraBase. No discussion of number of individual plants. Appendix E of that document contains information regarding the number of Priority species at most observation locations.	All numbers of Priority species were estimated from eyeballing the population (not by extrapolating from the vegetation community or some other method). During the transect survey the plant numbers were estimated from eyeballing the species. The data presented in Appendix E of that document does not include any extrapolation data. There is a chance that there are plants in the corridor that were not recorded, but unless the entire survey area was searched this will always be the case. The intensity of the survey should have been sufficient to record most.
Minigwal Borefield survey carried out by Botanica (PER Appendix 2-D2)		
Explanation of extrapolation: Numerous 50 m radius sampling locations were established throughout the survey area. At each sampling location that Priority Flora were located, a 10 x 10 m Priority Flora quadrat was established and all Priority Flora in the quadrat were counted (positive quadrat). At sampling locations were no Priority Flora were recorded, a theoretical negative quadrat was recorded. The spatial area of all 10 x 10m quadrats (positive and negative) was calculated for each vegetation unit. The number of Priority plants recorded within the quadrats (positive and negative) was tallied for each vegetation unit and divided by the spatial area of all 10x10m quadrats in that vegetation unit to give the average density for each Priority species in each vegetation unit. An extrapolated number of each Priority Flora was then calculated by multiplying the density of the Priority		

Methodology	Results	Consultant comment

flora within each vegetation group by the total area of that vegetation group within the survey area. This process was repeated for all vegetation units in the survey area for each Priority species. An example if provided below:

Ten sampling locations of a 50 m radius were established in Vegetation Unit A. Six of these contained the Priority Flora species *Olearia arida*, four contained no Priority Flora. 10x10 m quadrats were physically established at the 6 sampling locations with *O. arida* and all *O. arida* within the quadrats were counted. At the 4 sampling locations with no *O. arida* quadrats to count Priority Flora were not established, but a theoretical negative quadrat was recorded.

The results are:

Sampling Location in Vegetation Unit A	Positive or Negative for *O. arida*	Quadrat established	Number of *O. arida*
1	positive	physical	3
2	negative	theoretical	0 in the 50 m radius sampling location, therefore 0 in the theoretical quadrat.
3	positive	Physical	4
4	positive	Physical	3
5	negative	Theoretical	0
6	positive	Physical	3
7	positive	Physical	3
8	negative	Theoretical	0
9	negative	theoretical	0
10	positive	physical	1

- The total number of *O. arida* is 17, recorded in 10 quadrats (1000m^2 = 0.1ha) therefore the average density of *O. arida* is 170 per ha. As there is 1000 ha of vegetation group A in the survey area the extrapolated number of *O. arida* in that group across the survey area is 170,000 plants.
- This calculation is repeated for each vegetation group and the total extrapolated population size for *O. arida* is the sum of the population size for each vegetation unit.

6.4. GREENHOUSE GAS EMISSIONS

The Joint Venture has identified an error in the PER, with regards to the number of tonnes of $CO_{2\text{-}e}$ anticipated to be emitted per tonne of ore processed (under an at-worst scenario). Section 14.4.3 states that average emissions of approximately 44 kt $CO_{2\text{-}e}$ can be expected per tonne of ore processed. The units are incorrect and should be tonnes of $CO_{2\text{-}e}$ per kilotonne of ore processed. Thus the PER incorrectly overestimated emissions. There was a similar error in Figure 14.1 which has been corrected below in Figure 6.9. Calculations and units provided in Appendix 3-B9 of the PER are correct and those units are what the Joint Venture based its management and offset commitments on.

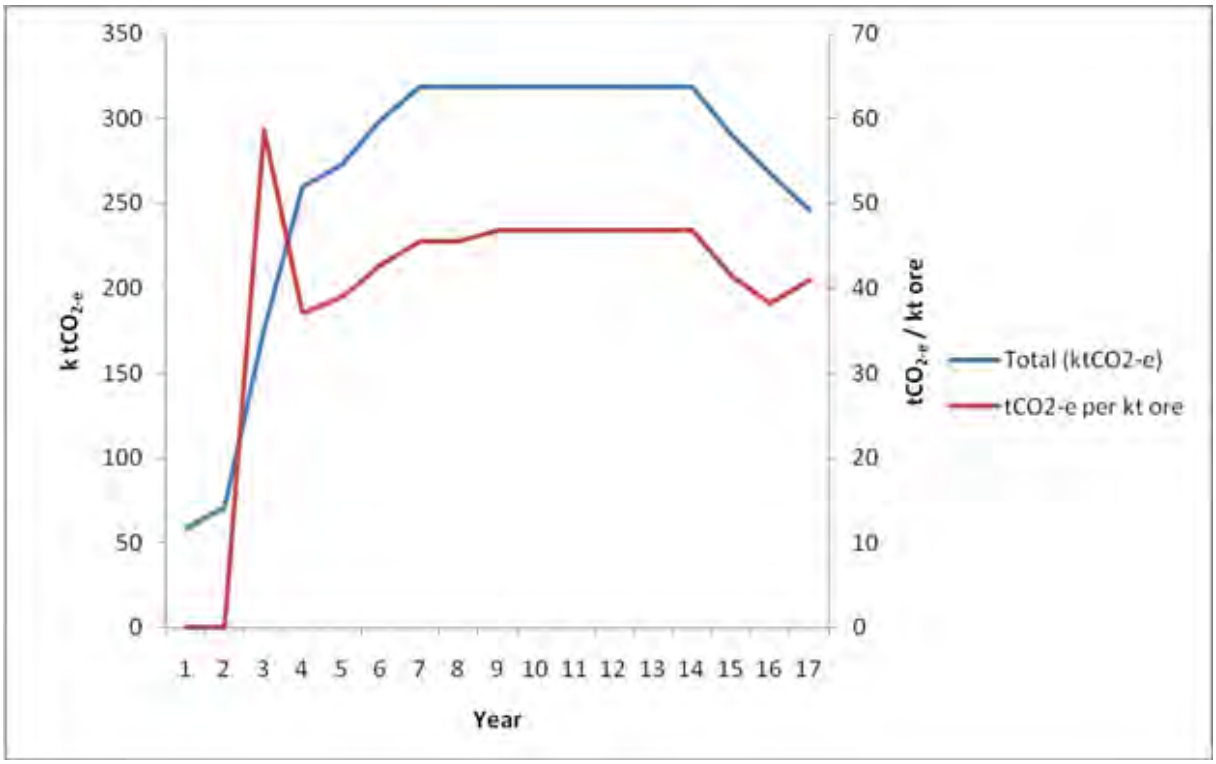


Figure 6.9: Total Greenhouse Gas Emissions for the Tropicana Gold Project (edited Figure 14.1 from PER)

7. SUMMARY

The formal public comment period for the Public Environmental Review of the Tropicana Gold Project closed on Tuesday, 24 November 2009. During the eight week (and one day) public comment period, the EPA received 11 formal submissions on the Project's PER documentation. In addition, one informal submission was received directly by the Joint Venture from the Shire of Menzies and one informal submission was provided to the EPA by DEWHA after the closure date. During the public comment period, the Joint Venture sort community feedback on the Project through a series of Public Information Sessions that aimed to engage and update the general community. Consultation with special interest groups including NGOs and the Indigenous community has continued since the PER's release. The Joint Venture has continued to meet with government agencies since the PER's publication to address their requests for further information and to progress the development of the Project's offset package; in addition, several of the regulatory departments were represented on a site visit to the Operational Area on 18 November 2009.

The public feedback provided in the formal and informal submissions, and meetings with community, special interest groups and regulators focused mainly on:

- potential impacts to terrestrial ecosystems;
- potential usage restrictions on the Mine Access Road by non-Joint Venture parties;
- heritage protection;
- potential dewatering impacts on gnamma holes and the surrounding environment; and,
- rehabilitation and closure.

The Joint Venture has addressed these issues in this document, as well as in meetings with key stakeholders (e.g. EMB and CDNTS) and community groups. The Joint Venture considers that the issues raised have been dealt with to a level acceptable for assessment by the EPA. The Joint Venture is confident that the Project can be developed and managed in an environmentally and socially responsible manner.

The Joint Venture is progressing offset discussions with the relevant government authorities and has included its preferred offset strategy to balance the residual impacts that remain after implementation of the mitigation hierarchy (Figure 2.2). The focus of the proposed package is a Trust fund aimed at funding research and management projects for biodiversity in the GVD as well as greenhouse efficiency programs and/ or renewable energy options that may be applicable to the region or wider industry.

Following the completion of the Project assessment process through the EPA, the EPA's report will be provided to the State Minister of the Environment who will make a determination on the environmental acceptability of the Project (Ministerial Statement). It is anticipated the DEWHA will commence their assessment under the EPBC Act following the release of the EPA Report. The Joint Venture envisage the Federal assessment process and the subsidiary approvals (e.g. Part V *EP Act 1986* and *Mining Act 1978*) will commence in the middle to later part of 2010. Assuming that all necessary approvals are granted within the expected time frame, construction of the Project will commence in late 2010 or early 2011.

8. REFERENCES

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Australian Government, Department of the Environment and Water Resources. 2007b. Use of Environmental Offsets under the Environment Protection and Biodiversity Conservation Act 1999. Discussion Paper. August.

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Environmental Protection Authority 2002. Guidance Statement for Minimising Greenhouse Gas Emissions Guidance No.12 Environmental Protection Authority, Western Australia.

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Environmental Protection Authority. 2008a. Guidance for the Assessment of Environmental Factors (in Accordance with the Environmental Protection Act 1986). Statement No. 19 Environmental Offsets- Biodiversity. August.

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Main B. Y. 1983. Further studies on the systematic of Australian Diplurinae (Chelicerata: Mygalomorphae: Dipluridae): Two new genera from South Western Australia. Journal of Natural History 17:923-949.

Tropicana Joint Venture. 2009. Tropicana Gold Project: Public Environmental Review. Produced with assistance from 360 Environmental Pty Ltd. September.

APPENDICES

APPENDIX 1: ADVERTISEMENTS FOR THE PUBLIC COMMENT PERIOD AND FACILITATED PUBLIC MEETINGS

Public advertisements regarding the formal public comment period.

The West Australian and the Kalgoorlie Miner

Date Advertised: 28 September and 9 November 2009

TROPICANA JOINT VENTURE

TROPICANA GOLD PROJECT
PUBLIC ENVIRONMENTAL REVIEW
(28 September 2009 - 24 November 2009)

The Tropicana Joint Venture is proposing to develop the Tropicana Gold Project, a gold mine located approximately 330 km east northeast of Kalgoorlie and 200 km east of Laverton on the western edge of the Great Victoria Desert in Western Australia. The Project will establish an open-cut mine, processing facility, borefield, power supply, access road and other associated infrastructure required to develop the Tropicana and Havana deposits.

A Public Environmental Review (PER) has been prepared by the Joint Venture in accordance with Western Australian Government procedures and is released for public review. The Western Australian process has also been accredited by the Australian Government for the purpose of its environmental assessment. The PER describes the proposal, examines the likely environmental effects and the proposed environmental management strategies associated with the proposed development.

Hard copies of the PER may be purchased for $10 or an electronic copy may be purchased for $5 (including postage and packaging) from:

AngloGold Ashanti Australia
Level 13, St Martins Tower
44 St Georges Terrace
PERTH WA 6000
Telephone: 1800 068 705

Copies of the PER may also be downloaded from ***www.tropicanajv.com.au.***

Copies of the PER will be available for examination at:

- Department of Environment and Conservation
  Library/Reading Room
  4th Floor, The Atrium
  168 St Georges Tce, PERTH
- Department of Environment and Conservation Goldfields Regional Office
  32 Brookman Street, KALGOORLIE
- Kalgoorlie-Boulder Library
  Roberts Street, KALGOORLIE
- Laverton Library
  Laver Place, LAVERTON
- Menzies Library
  Corner Shenton & Brown Streets, MENZIES
- JS Battye Library
  Francis Street, PERTH

#9911178523#9

Public submissions close on 24 November 2009.

The EPA prefers submissions to be made electronically using one of the following:

- the submission form on the EPAís website: www.epa.wa.gov.au/submissions.asp; or,
- by email to submissions.eia@dec.wa.gov.au.

Alternatively, submissions can be

- posted to ì"Chairman, Environmental Protection Authority, Locked Bag 33, CLOISTERS SQUARE WA 6850, Attention: Kaylene Carter"; or
- delivered to the Environmental Protection Authority, Level 4, The Atrium, 168 St Georges Terrace, Perth, Attention: Kaylene Carter; or
- faxed to (08) 6467 5562.

If you have any questions on how to make a submission, please ring the EPA assessment officer, Kaylene Carter on 6467 5413.

Menzies Matters - Shire of Menzies Newsletter

Date Advertised: October 2009 edition

TROPICANA JOINT VENTURE - Public Notice

TROPICANA GOLD PROJECT

PUBLIC ENVIRONMENTAL REVIEW

(28 September 2009 - 24 November 2009)

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Department of Environment and Conservation Goldfields Regional Office - 32 Brookman Street, KALGOORLIE

Kalgoorlie-Boulder Library - Roberts Street, KALGOORLIE

Laverton Library - Laver Place, LAVERTON

Menzies Library - Corner Shenton & Brown Streets, MENZIES

JS Battye Library - Francis Street, PERTH

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the submission form on the EPA's website: www.epa.wa.gov.au/submissions.asp; or,

by email to submissions.eia@dec.wa.gov.au.

Alternatively, submissions can be posted to "Chairman, Environmental Protection Authority, Locked Bag 33, CLOISTERS SQUARE WA 6850, Attention: Kaylene Carter"; or delivered to the Environmental Protection Authority, Level 4, The Atrium, 168 St Georges Terrace, Perth, Attention: Kaylene Carter; or faxed to (08) 6467 5562.

If you have any questions on how to make a submission, please ring the EPA assessment officer, Kaylene Carter on 6467 5413.

Public advertisements regarding the PER Public Information Sessions.

The West Australian and the Kalgoorlie Miner

Date Advertised: 21 and 28 October 2009

ANGLOGOLD ASHANTI AUSTRALIA

Tropicana Gold Project Public Environmental Review Information Sessions

INDEPENDENCE GROUP NL

As part of our ongoing community engagement program, AngloGold Ashanti Australia, on behalf of the Tropicana Joint Venture, would like to invite you to participate in an information and discussion session on the proposed Tropicana Gold Project Public Environmental Review (PER).

Three sessions are scheduled for Perth and the Goldfields and will comprise of a 1 hour formal presentation (4-5pm and 10-11am) with poster display for viewing before and after presentation.

Location	Date and Time	Venue
Perth	Monday 2nd November 2009 3pm - 6pm	Great Southern Room Alexander Library (State Library)
Kalgoorlie	Wednesday 4th November 2009 3pm – 6pm	WMC Centre, Auditorium
Menzies	Thursday 5th November 2009 9:30am - 11:30am	Menzies Town Hall

#9M43196-21/10

Each session comprises of a 1 hour formal presentation (4-5pm and 10-11am) with poster display for viewing before and after presentation. Please register your interest before the 29th October 2009 by calling 1800 068 705 or e-mailing us at TropicanaGoldProject@anglogoldashanti.com.au. Please ensure you provide your full details and the session you wish to attend.

For additional information on these sessions or to download the PER please refer to our website www.tropicanajv.com.au or call 1800 068 705.

The sessions will not be a Contractor briefing, however interested Contractors may register details via our website.

APPENDIX 2: TRANSCRIPT OF SUBMISSIONS RESPONDED TO BY THE JOINT VENTURE

Submission A: Shire of Laverton submission - Steven Deckert 3rd Nov 09

The Joint Venture has referred to this submission as Submission A.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

I have tabled the above PER at Council, however there does not seem to be any major concerns raised by Councillors in this project. This is primarily because the main mining operations and processing plant are in the Menzies Shire. While the proposed borefield is in the Laverton Shire it has little impact or concern for Council.

The Joint Venture has referred to this submission as Submission A.2; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

One Councillor did make a comment that any formation created on this Project that can hold water, such as tailing dams, refuse sites etc should be fenced to exclude wildlife entering these bodies of water and perishing. I'm not sure if this is covered in the PER, however it seems a commonsense suggestion if it hasn't been considered.

The Joint Venture has referred to this submission as Submission A.3; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Apart from this, Council is generally supportive of such projects and wishes the proponents every success because of the benefits to the wider Goldfields region.

Submission B: Dept. of Water submission - Liz Western 4th Nov 09

TROPICANA GOLD PROJECT – PUBLIC ENVIRONMENTAL REVIEW (ASSESSMENT NO:1745) – EPBC NO: 2008/4270

The Joint Venture has referred to this submission as Submission B.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Thank you for your letter dated 28 September 2009 regarding the above referral. The Department of Water (DoW) has reviewed the Public Environmental Review and is satisfied that the advice previously provided has been incorporated. The DoW now finds this proposal acceptable and has no further comment.

Submission C: Central Desert Native Title Services

3.1 Stakeholder engagement and consultation (Chapter 4 of the PER)

The Joint Venture has referred to this submission as Recommendation C.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Recommendation 3.1.1

Traditional owners be treated as primary stakeholders as they are in the unique position of having private interests in the Project Area as the Traditional Owners of the land and those people with whom the Joint Venture will need to develop and maintain ongoing long-term relationships with.

The Joint Venture has referred to this submission as Recommendation C.2; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Recommendation 3.1.2

There be focussed consultations with the Traditional Owners via Central Desert in relation to all matters addressed in these submissions.

3.2 Heritage management and protection (Chapter 8 of the PER)

The Joint Venture has referred to this submission as Recommendation C.3; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.2.1

All heritage identification and protection matters to be undertaken on the basis of the private native title right to maintain and protect cultural heritage including the right to maintain and protect sites of significance, Thus the primary source of heritage matters is facilitated though the Native Title Act 1993. All cultural heritage protection is bases on the knowledge stemming from the native title holders and Traditional Owners of the area.

The Joint Venture has referred to this submission as Recommendation C.4; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.2.2

Ethnographic and archaeological heritage survey to be conducted over the Project Area by Traditional Owners who hold appropriate knowledge of laws and customs in the area. The Project Area to be surveyed with the aim of identifying all cultural heritage information in sufficient detail to inform a long term Heritage Management Plan (that is the appropriate methodology for mining activities) In Circumstances of cultural sensitivity certain privacy arrangements may also attach to that information.

The Joint Venture has referred to this submission as Recommendation C.5; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.2.3

The Joint Venture's draft Heritage Management Strategy be re-written in consultation with Traditional Owners following the development and implementation of the Heritage Management Plan.

The Joint Venture has referred to this submission as Recommendation C.6; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.2.4

A Heritage Management Plan between the Joint Venture and the Traditional Owners to be developed providing a clear understanding of the cultural heritage requirements as advised by the native title holders. The Heritage Management Plan will have the Joint Venture direction as to how areas of cultural significance and/or sensitivity are to be managed in conjunction with mining activities.

The Joint Venture has referred to this submission as Recommendation C.7; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.2.5

On-going consultations with Traditional Owners in regards to heritage matters. This relationship between parties to be cultivated though the implementation of the Heritage Management Plan over time.

3.3 Environmental impact assessment and management (Chapter 7 of the PER)

The Joint Venture has referred to this submission as Recommendation C.8; the Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

Recommendation 3.3.1

Best Practise environmental outcomes for the area.

The Joint Venture has referred to this submission as Recommendation C.9; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.3.2

Incorporation of an indigenous cultural context into environmental planning and management around mine.

The Joint Venture has referred to this submission as Recommendation C.10; the Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

Recommendation 3.3.3

Open and transparent environmental processes including provision of all relevant documentation relating to environmental processes and consultation with and advice from Traditional Owners about environmental matters.

The Joint Venture has referred to this submission as Recommendation C.11; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.3.4

Financial and corporate support for employment and training opportunities related to environmental monitoring and rehabilitation practises.

The Joint Venture has referred to this submission as Recommendation C.12; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.3.5

Funding for Traditional Owners to seek advice on best practise environmental management practises.

The Joint Venture has referred to this submission as Recommendation C.13; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Recommendation 3.3.6

In relation to Indigenous heritage matters implement the recommendations made under heading 3.2 above.

3.4 Existing Environment (Chapter 6 of the PER)

The Joint Venture has referred to this submission as Recommendation C.14:

Recommendation 3.4.1

Additional flora and fauna surveys be undertaken with Traditional Owners to assess the existing environment from a cultural perspective.

3.5 Risk based approach to environmental impact assessment (Chapter 9 of the PER)

The Joint Venture has referred to this submission as Recommendation C.15; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Recommendation 3.5.1

Any assessment of the environmental and other risks associated with the project must involve substantial input from the traditional owners of the land who have a unique perspective on potential impacts as the traditional land owners.

3.6 Cultural Land Management/Caring for Country

The Joint Venture has referred to this submission as Recommendation C.16; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.6.1

Objectives, processes and outcomes for supporting traditional ecological knowledge based programs that complement existing cultural obligations and frameworks. Some of these objectives may include;

a) Reinforcing traditional values and knowledge and renewed connections to country
b) Supporting the role of community elders in passing on traditional knowledge to next generation and strengthening ties between elders and younger generations.
c) Ongoing facilitation and obligations to country
d) Respect and utilisation of people and their traditional knowledge in management of land and culture as well as providing protection and security of Australia's biodiversity and natural resource in to the future and
e) Opening up other options for sustainable local employment for indigenous people conducted within a cultural context

The Joint Venture has referred to this submission as Recommendation C.17; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.6.2

Financial and corporate support for the development of natural and cultural heritage management programs. Objective of programs including the provision of opportunities to improve indigenous livelihoods to identify high priority natural and cultural heritage management issues on country, increase capacity for indigenous engagement with government and other service providers in relation to natural and cultural heritage resource management.

The Joint Venture has referred to this submission as Recommendation C.18; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.6.3

Financial and corporate support for economic opportunities, including business, employment and training opportunities, that complement existing cultural frameworks and obligations around country.

3.7 Cultural Awareness

The Joint Venture has referred to this submission as Recommendation C.19; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Recommendation 3.7.1

Processes for developing and maintaining long-term relationship between the Joint Venture and Traditional Owners including through cross-cultural understandings and acceptance.

The Joint Venture has referred to this submission as Recommendation C.20; the Joint Venture's response is detailed in Section 4.2 Socio/economic Aspects.

Recommendation 3.7.2

Financial and any other support for the development, preparation and delivery of a cultural awareness package. Cultural awareness packages to be tailored for the project and may include classroom as well as "bush" components and DVD presentations.

The Joint Venture has referred to this submission as Recommendation C.21; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Recommendation 3.7.3

Compulsory cultural awareness training for all Joint Venture on site permanent staff contractors, temporary and short-term staff for the life of the mine.

3. 8: Peer Review Panel (Chapter 12 of the PER)

The Joint Venture has referred to this submission as Recommendation C.22; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Recommendation 3.8.1

In the future, the Joint Venture must recognise the importance of proper Traditional Owner input regarding the environment and consult with Central Desert on behalf of the Traditional Owners.

3.9: Environmental and social commitments (Chapter 13 of PER)

The Joint Venture has referred to this submission as Recommendation C.23; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Recommendation 3.9.1

The Joint Venture agree to Central Desert's Proposal.

3.10: Closure and Rehabilitation (Chapter 10 of PER)

The Joint Venture has referred to this submission as Recommendation C.24; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Recommendation 3.10.1

The Joint Venture ensures that, from an environmental perspective, Traditional Owners are consulted in every facet of the closure and rehabilitation of the mine. That the Traditional Owners knowledge and expertise is utilised in the re-vegetation of the mine site.

The Joint Venture has referred to this submission as Recommendation C.25; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Recommendation 3.10.2

The Joint Venture ensures that Traditional Owners are included in partnerships involved in the 'Commitment to Research' strategy.

Submission D: Environmental Health Directorate – Jim Dodds 17th Nov 09

1. Water Quality

The Joint Venture has referred to this submission as Submission D.1.1; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Drinking water

To demonstrate that adequate treatment and control steps are in place for the proposed reverse osmosis plant, the proponent will need to address the following:

- Compliance with the Australian Drinking Water Guidelines 2004.
- Establishment of drinking water quality reporting procedures with Department of Health.
- Establishment of a Drinking Water Quality Management Plan.
- Minesites and Exploration Camps Drinking Water Quality Compliance Requirements.

- Observing *Guidelines for the Bulk Cartage of Drinking Water* if potable water is to be transported around the extensive land holdings.

The Joint Venture has referred to this submission as Submission D.1.2; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Recycled water reuse (including grey water)

The proposal refers to the reuse of recycled water for the purposes such as dust suppression. The proponent should be made aware of and will need to address the following:

- Alternate Water Supply Guidelines – Stormwater and Rainwater.

The Joint Venture has referred to this submission as Submission D.1.3; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Wastewater disposal

- Although the Public Environmental Review (PER) has not discussed how sewage will be collected, treated or disposed of, the proponent must ensure that all onsite wastewater disposal systems must conform to the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.* Systems for onsite wastewater disposal must be approved by the Executive Director, Public Health.
- Appropriate design and maintenance of sewage treatment plants is essential to prevent the breeding of nuisance and disease vector mosquitoes. The capacity of the plant or lagoons must be sufficient to allow for wet season rainfall, in order to prevent overflows and subsequent mosquito breeding. The use of recycled wastewater for irrigation of vegetation must be done in such a way that it does not allow pooling and subsequent mosquito breeding.
- It is noted that there will be an upgrade of the exploration camp from 60 to 100 beds and the other construction camps will also fluctuate in staff numbers. Wastewater Treatment Plants and effluent disposal areas need to be designed to accommodate changes in flows and biological loadings. Any existing plant size upgrades or disposal field changes will require additional approvals.
- As the use of en-suite units may lead to higher wastewater flows, this should be taken into account in the sizing of the wastewater treatment plant and effluent disposal systems.
- Provision needs to be made for the appropriate disposal of sludge from the wastewater treatment plant. It should be noted that landfill sites approved for general refuse from the accommodation village may not be suitable for this purpose.

2. Environmental Health Hazards

The Joint Venture has referred to this submission as Submission D.2.1; the Joint Venture's response is detailed in Section 4.2 Public/ Personnel Safety and Health.

Air quality

- Typically with operations of this type and scale the biggest concern is dust impact on close by communities. The distance of the site to the nearest permanent regional town and individual residence ensures that dust from this development should not present a health issue. However, given the location of the accommodation village dust suppression measures should be employed to reduce amenity impacts and potential short-term respiration effects at the village. The dust monitoring plan should include validation of the modelling which predicts that NEPM PM_{10} will be met at the village location.
- The dust management plan should include monitoring of air emissions during activities that may affect sensitive premises (i.e. the village) both during the construction and operation phases of the project. The dust management plan should incorporate adaptive management practices to respond proactively to conditions likely to generate dust.

  The following should be noted and / or clarified:
  - *Land development sites and impacts on air quality* (DEP 1996) refers to "The existing DEP limit for the maximum allowed level of dust concentration in the atmosphere is 1000 micrograms per cubic meter of air, measured over 15 minutes' and not 1000 **mg/m^3** as appears in the PER (p7-11).
    - This level (1000 **µg/m^3**) is not to be exceeded beyond the boundary of the premises and generally does not apply to road or rail corridors; also
    - the Department of Health does not consider dust visibility an acceptable monitoring method. Dust visibility alone should not be relied upon as a measure of PM_{10} exceedances or where boundary dust has the potential to affect sensitive receptors.
  - *The Mine Safety & Inspection Act 1978 and 1994 are cited in Appendix 2-B1 on p38 & p48 respectively as providing appropriate guidance for managing dust containing fibrous material. Given that 360 Environmental have identified potential health effects from Fibrous minerals to workers -*
    - TJV should clarify whether both Acts apply; and
    - The sections under the Act or Acts relevant to the management of airborne dust containing fibrous material; or
    - Define the 'acceptable' levels referred to in the management of fibrous materials on page 48.

The Joint Venture has referred to this submission as Submission D.2.2; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Accommodation

- The proposal includes the provision of onsite accommodation. There should be evidence that the necessary Local Government approvals have or will be obtained to ensure compliance with the requirements of various regulations, health local laws and standards, designed to ensure that dwellings promote good health for all occupants.

The Joint Venture has referred to this submission as Submission D.2.3; the Joint Venture's response is detailed in Section 4.2 Public/ Personnel Safety and Health.

Pesticide Use and Safety

- There are general requirements for all of proponents such as AngloGold Ashanti – Tropicana Gold Project to control pests (weeds, vermin, vectors, feral animals etc) on the site. Similar to our previous comments to the original proposal it is expected that any treatment and application of pesticides must be applied in accordance with the *Health (Pesticides) Regulations 1956.* In addition, contractors/ persons who are applying the pesticides for reward must be appropriately trained and hold a current Pesticide License and be employed by a registered Commercial Pest Firm. However, if the proponent/ company wish their own employees to apply pesticide(s) as part of their Pest Management Program, then the employees should be provided with sufficient knowledge, skills, training and the personal protective equipment to safely apply the pesticide(s).
- The Department of Health recommends the proponents develop, implement, monitor and evaluate (and modify as required) a Pest Hygiene Management Plan which should include the prevention and control of pests (such as weeds, vectors, vermin, feral animals etc). The Pest Hygiene Management Plan should also include the education of all employees, contractors, visitors and the public to the site to ensure good hygiene practices are used to prevent pests being conveyed and attracted to operational site (and accommodation) activities. Prevention strategies may include but are not limited to; education, control over the proper disposal of waste material and the application of pesticides to further reduce the impacts of pests on the site, employees, contractors, visitors and the public.

The Joint Venture has referred to this submission as Submission D.2.4; the Joint Venture's response is detailed in Section 4.2 Public/ Personnel Safety and Health.

Mosquito management

- The proposed development is located in an environment that may experience problems with nuisance (biting) insects after rainfall and flooding. Mosquitoes are

likely to be the most common problem, but other biting flies, especially may also cause a nuisance.

- A large proportion of nuisance and disease carrying mosquitoes affecting the proposed development are likely to emanate from surrounding natural mosquito breeding habitat. However, on-site infrastructure and activities also have the potential to create mosquito breeding habitat.

The proposal should:

- Identify the potential risk to the public (and the workforce) from nuisance mosquitoes and mosquito-borne disease.
- Identify natural breeding sites on the subject land and within mosquito dispersal distances of the subject land. Infrastructure should be located as far away as possible from permanent and seasonally-inundated natural breeding sites of mosquitoes.
- Develop an integrated mosquito management plan that addresses the following:
    a. Location and design of water management and water-holding infrastructure (wastewater, effluent reuse and stormwater infrastructure, drinking and plant processing water supplies, overflow areas, dams and other constructed water bodies, borrow pits, areas of scouring and water retention, etc);
    b. Ongoing maintenance of water management and holding infrastructure;
    c. Monitoring of mosquito breeding sites;
    d. Chemical control of mosquitoes, including larvicides, adult fogging and residual adulticides;
    e. Physical control (source reduction) approaches to mosquito management;
    f. Workforce and community education;
    g. Provision of screened outdoor living areas;
    h. Signage and health warnings; and
    i. Mosquito avoidance and personal protection.
- Ensure site infrastructure does not create or exacerbate breeding of nuisance or disease-carrying mosquitoes. This includes wastewater and stormwater infrastructure, water holding infrastructure, overflow areas, areas of scouring and water retention etc.
- Ensure alterations of topography (e.g. resulting from earthworks / pipeline installation) that enhance retention or impoundment of rainwater and runoff, or that promote scouring are avoided as to minimise opportunities for mosquitoes to breed.

3 Other health considerations

The Joint Venture has referred to this submission as Submission D.3.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Provisions of health services

- The proposal has the potential requirement for health services arising from increased population numbers to meet the workforce needs of this proposal.

- Although consideration should be given for the required GP services, it is essential that the impacts on the Department of Health and the health services provided by the WA Country Health Services in the region are also considered. These services are likely to be utilised by the proponent and its employees and it is important that these services can meet the increases in population size. It is recommended that the proponent consults with Department of Health representatives in Kalgoorlie-Boulder to ensure that service requirements can be appropriately considered. Contact details are available at www.wacountry.health.wa.gov.au

The Joint Venture has referred to this submission as Submission D.3.2; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Stakeholder consultation

- It is important that the proponent recognised the need to liaise with the City of Kalgoorlie-Boulder regarding any requirements under the *Health Act 1911*. The Department of Health will be pleased to assist with any health issues to support considerations by the City of Kalgoorlie-Boulder.

Submission E: Dept. of Indigenous Affairs submission - Patrick Walker 20th Nov 09

The Joint Venture has referred to this submission as Submission E.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

I am of the view that if the Proponent adheres to the commitments outlined in the Heritage Management and Protection sections of the Document, and the Heritage Management Strategy provided to the Department of Indigenous Affairs (DIA) on 30 July 2009, they will meet their obligations under the *Aboriginal Heritage Act, 1972* (AHA).

The Joint Venture has referred to this submission as Submission E.2; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

Reports of the ethnographic and archaeological surveys conducted for the projects have not been submitted to the DIA but Tropicana Joint Venture have commissioned and submitted consolidation reports with the Document. In addition they have provided Site Recording Forms for Aboriginal heritage sites identified in their project areas in accordance with section 15 of the AHA.

The Joint Venture has referred to this submission as Submission E.3; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

As stated in the Document, Tropicana Joint Venture has commenced consultation with the Native Title Claimants and Heritage Custodians through the Central Desert Native Title Service to conduct ongoing ethnographic consultants. Tropicana Joint Venture have acknowledged that all of the Aboriginal people have may have a cultural association with the region have not yet participated in ethnographic consultations regarding the project, and are committed to conducting further work in the region to cover the relevant tenure.

The Joint Venture has referred to this submission as Submission E.4; the Joint Venture's response is detailed in Section 4.2 Indigenous Heritage.

It is my opinion that the project can be managed to protect the cultural heritage values of the project area if the Proponent observes the following commitments made in the Document:

1) The conduct of Heritage Surveys for all relevant areas;
2) The ongoing consultation with all relevant Aboriginal people such as Native Title Claimants, Heritage Custodians and all those with cultural associations with the area.
3) The avoidance of impact to Aboriginal heritage sites in accordance with the AHA;
4) The implementation of the Heritage Management Strategy in conjunction with the DIA and the relevant Aboriginal people.

Submission F: Review of the Tropicana Gold Project Public Environmental Review (PER) – Wayne Astill 23rd Nov 09

The AngloGold Ashanti Tropicana Gold Project PER has been assessed by the DEC Goldfields Industry Regulation group in terms of the potential emissions and discharges from the proposed project with regard to relevant prescribed premise categories. Some of the matters raised below will be a focus of the works approval and Part V licensing process and are mentioned as for future consideration by the proponent. These are listed and discussed below.

Emissions and Discharges

Category 5: Processing or beneficiation of metallic or non-metallic ore.

The Joint Venture has referred to this submission as Submission F.1.1; the Joint Venture's response is detailed in Section 4.5 Pollution of land and water.

Tailings

- Tailings will be thickened, what are the expected % solids?
- Seepage will be controlled by an under drainage network including HDPE liner beneath the decant ponds and surrounding the decant tower and a clay liner for the remaining area of the TSF. It is understood from verbal conversations with the proponent that if there is insufficient clay locally available that the TSF will be partially lined with HDPE and the rest with locally sourced clay. Within the works approval application DEC would expect information on the expected permeability and seepage rates be, including the impact on the groundwater flow direction and potential SWLs due to seepage.
- Has the root zone depth in the area of the proposed TSF been determined? Nearby native vegetation being impacted by groundwater mounding will be a factor needing operational protection.
- WAD cyanide is aimed to be kept below 50mg/L as per the cyanide code. Monitoring will take place to ensure compliance however it is stated that contingency plans such as UV irradiation etc will be considered only after the first year of monitoring. Apart from the TSF being fenced, what measures will be put in place, during this year, to ensure that wildlife is not impacted if levels are above 50mg/L?
- The baseline contents of major geochemical constituents have not been included, what are the expected heavy metal, pH and salinity of the tailings including the leaching characteristics?
- Bore monitoring stations will be constructed down stream of the TSF and dewatering bores installed when and if required. Baseline data will be recorded and SWL of the bores will be checked monthly and water quality quarterly during operation. Also will upstream bores be included?
- The TSF pipeline will be installed away from sensitive areas and within low permeability bunds. The pipeline will be inspected at least once per shift and include

pressure senses and alarm systems. The DEC will need confirmation at works approval stage that the pipeline be welded to Australian Standards and that the containment system will also include catchment pits in the event of a large pipeline spill.

- The TSF will be designed to retain a 1 in 100 year 72 hour rainfall event, what has this capacity been calculated as, the DEC will require demonstration that a 0.3m freeboard is adequate during the works approval process.

The Joint Venture has referred to this submission as Submission F.1.2; the Joint Venture's response is detailed in Section 4.4 Flora and Vegetation.

Dust

- It is noted that dust suppression and dust extraction systems will be used on the crushing plant. Water from the borefields, removed from the pit and from rain events will be used for dust suppression on the roads. The roads will be built in locations that avoid listed flora and with drains installed to capture runoff. Monitoring of road side vegetation will be implemented, it is recommended that the proponent describe this monitoring plan and frequencies.
- It is also stated that dust suppressants will be applied, at what frequencies?

Category 53: Electric Power Generation

The Joint Venture has referred to this submission as Submission F.2.1; the Joint Venture's response is detailed in Section 4.5 Air Quality.

Gaseous

- Atmospheric dispersion modelling was carried out, including analysis of PM_{10}, NO_2, SO_2, CO and VOC's. These indicated that there was no expected impact on threatened flora and fauna located due west or at the village, other sensitive receptors are 200 km away. During the works approval stage detailed designs will be needed of the power station location in relation to the rest of the infrastructure and identified threatened flora and fauna? Why is an impact in all directions not discussed?
- What is the expected velocity and moisture content of emissions?
- The power station will have a capacity up to 40MW and be run on diesel with substitution of less-polluting fuels considered as they become available. During the works approval stage the key design features including stack height, diameter and sampling points and have their influence will have to be considered further.
- An emergency response plan will be developed in the event of unplanned emissions. The project has also been designed to incorporate a 5 star energy rated village, a low emissions fleet, optimised mining schedules and low energy equipment in the plant. Periodic monitoring of the site will also be carried out, at what frequencies?

The Joint Venture has referred to this submission as Submission F.2.2; the Joint Venture's response is detailed in Section 4.5 Noise and Vibration.

Noise

- As the nearest sensitive receptors are 200 km away, the biggest noise impact is considered to be on fauna in the area, they are expected to become accustomed to the noise or move out of the area and into nearby large areas of relatively undisturbed habitat. Will silencing units be installed to lessen this impact?

Category 54: Sewage Facility

The Joint Venture has referred to this submission as Submission F.3.1; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Capacity

- During construction there is estimated to be up to 700 personnel, during operation there is estimated to be up to 450 personnel, presumably therefore exceeding the capacity limit of 100 cubic meters for a registered sewage facility (category 85) and the facility will therefore need to be included on any future works approval or licenses. Has a new facility been considered for the site or what is the capacity of the existing facility for the exploration camp and will this be suitable?
- Where will the facility be constructed? Has sensitive receptors such as priority flora and fauna and village residents been considered.

Increased nutrient levels

- Grey water will be recycled. Effluent associated with treated water will be fed into the process water. Will all WWTP water be recycled in this way or will any be irrigated, including where to?
- Will the plant include evaporation ponds? If so how will these be designed and monitored and where will they be located?
- The DEC will also need confirmation of the following;
  - How will pipelines be monitored?
  - How will nutrient levels be monitored?
  - How will weeds due to irrigation be monitored?
  - How and where will solids be disposed?

Category 89: Landfill Facility

The Joint Venture has referred to this submission as Submission F.4.1; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Type and Capacity

- The type and capacity (i.e. presumably a size increase to the current landfill will be required) of all future landfills on site need to be considered to determine the category and if works approvals and licensing will be required.
- If new sites are to be proposed where will these be located?

Associated impacts

- The project landfill site will be in accordance with the *Environmental Protection (Rural Landfill) Regulations 2002.* Internal audits will also be conducted.
- How will feral animals or animals taking advantage of disposed waste be controlled?

Category 6: Mine Dewatering

Pit dewatering

The Joint Venture has referred to this submission as Submission F.5.1a; the Joint Venture's response is detailed in Section 4.1 Design.

- This category is not considered relevant as water recovered from the mining areas will be used for dust suppression and processing and therefore not specifically released into the environment. However will holding ponds/evaporation ponds be required for excess amounts of water or is it anticipated that given the limited water resource for the project that the water will be quickly utilised at a fast turn over rate?

The Joint Venture has referred to this submission as Submission F.5.1b; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

- DEC would like information on how this pipeline will be monitored at works approval and licensing stage?

The Joint Venture has referred to this submission as Submission F.5.2; the Joint Venture's response is detailed in Section 4.3 Surface Water.

Other site hydrology

- An assessment of the surface drainage along the proposed roads were completed and appropriate management recommendations will be incorporated into the road design to prevent water pooling on roads and changes to sheet flow due to road

embankments. This will include a monitoring program. How will surface drainage be addressed around other areas of the project?

- Is there potential for water starvation due to a 'shadow' effect form large infrastructure, e.g. TSF and plant, in terms of sheet flows?

Category 73: Bulk storage of chemicals, etc

The Joint Venture has referred to this submission as Submission F.6.1; the Joint Venture's response is detailed in Section 4.5 Pollution of land and water.

Chemical storage

The site will be built in accordance with the cyanide code and hydrocarbons will be stored on sealed surfaces in bunded locations, compliant with AS1940: 3780 and 4452. A compulsory spill reporting and spill emergency response procedure will be incorporated and a bioremediation facility will be included. Apart from cyanide and hydrocarbons what other chemicals will be stored on site and in what quantities and will they be stored to the same standard?

Submission G: Dept Mines and Petroleum submission - Katherine Mansas 23rd Nov 09

The Joint Venture has referred to this submission as Submission G.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

The Department has received and reviewed the PER for the Tropicana Gold Project. The Department considers the comments made in the submission dated 1 May 2009 for the Draft PER to be relevant. The Department has no further comments to make for the September 2009 PER.

The PER is considered adequate to address issues for the current state of the Project.

The Joint Venture has referred to this submission as Submission G.2; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Please note that AngloGold will need to submit a Preliminary Closure Plan when they submit the Mining Proposal.

Submission H: Tropicana Gold Project (Assessment No. 1745) – Keiran McNamara 23rd Nov 09

Management Strategies

The Joint Venture has referred to this submission as Submission H.1.1; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Issue: The proponent's key environmental management strategies are not binding on the proponent.

Recommendation 1: *That the proponent's key environmental management strategies be made conditions of approval.*

Discussion

Opening up a previously undeveloped landscape is likely to have unintended secondary consequences on biodiversity and ecosystem function through increased development activities, visitor access, risk of threatening processes and demands on the services provided by DEC.

To manage these impacts on biodiversity and ecosystem function, the proponent has proposed a series of management strategies and committed to"...*ensure its management strategies are adapted as new information becomes available and will develop additional management strategies as required..."* (PER, Executive Summary, page xxv, paragraph 1).

For some species of conservation significance (particularly the marsupial mole, sandhill dunnart and short range endemics (SRE) invertebrate fauna), the impact of the proposal is potentially significant and specific programs and strategies will need to be developed in consultation with DEC and these strategies should be made a condition of approval.

Indirect Impacts

The Joint Venture has referred to this submission as Submission H.2.1; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Issue: Areas that will be subject to indirect impacts require delineation and monitoring programs.

Recommendation 2: *That a buffer, in which flora and vegetation may decline to pre-defined limits, be delineated around areas approved for disturbance.*

Recommendation 3: *That condition(s) are applied that stipulate trigger levels which specify the measurable level of decline/impact for flora and vegetation within the predetermined buffer area before contingency measures are applied to avert further decline/impact.*

Recommendation 4: *That the proponent develops a monitoring program applicable to the buffer area. This program should also include reference sites, and provide for adaptive management where the measurable change has reached identified trigger levels.*

Recommendation 5: *That a condition be developed that requires the proponent to report annually on the findings of the monitoring program.*

Discussion

The potential for indirect impacts on flora and vegetation has not been addressed. This could be done by delineating buffer areas where indirect impacts are expected, identifying thresholds of change and monitoring these areas accordingly.

Project Definition

The Joint Venture has referred to this submission as Submission H.3.1; the Joint Venture's response is detailed in Section 4.1 Subsidiary Approvals and Compliance i.e. works approval.

Issue: Developing two access roads will increase the impact of the proposal.

Recommendation 6: *That only one access route is developed incorporating both the access road and the communications infrastructure corridor.*

Discussion

By incorporating the communications infrastructure into the preferred access road corridor, the project footprint and impact will be reduced.

The Joint Venture has referred to this submission as Submission H.3.2; the Joint Venture's response is detailed in Section 4.1 Design.

Issue: The final locations of the borefield, accommodation village and access roads (including locations of borrow pits) have not been defined, nor the impacts assessed.

Recommendation 7: *That the proponent defines the proposed locations and footprints of outstanding areas, and provides commitments to avoid defined conservation significant species and communities.*

Recommendation 8: *That, if Recommendation 7 cannot be implemented, maximum acceptable levels of impact on conservation significant species and communities be set and become a condition of approval.*

Discussion

Undefined development areas potentially present unknown impacts on conservation significant species and communities, namely priority flora and threatened fauna, however; the extent of the impact is unknown and disturbance limits are required. Whilst the proponent

has committed to reducing the impacts of the undefined areas, there will be residual impacts on conservation significant species and communities that require review.

Fauna

The Joint Venture has referred to this submission as Submission H.4.1; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Marsupial Mole

Issue: The assessment on risk of isolation and fragmentation of marsupial mole habitat (connectivity of dunes) is incomplete.

Recommendation 9: *That the proponent provides the marsupial mole habitat fragmentation addendum to DEC for review and comment as required.*

Discussion

Both forms of the marsupial mole (*Notoryctes typhlops* and *N. Caurinus)* are threatened fauna under the Wildlife Conservation Act and Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The proponent has commissioned a report on the potential risk of isolation and fragmentation of marsupial mole habitat (indicated at the 26 October 2009 meeting) to address comments in Appendix F2 (page 23, para 4 and page 24, para 4), which state:

> *"The sensitivity of marsupial moles to the connectivity of dunefields in the WA GVD suggests that the species requires dunes to disperse and colonise new habitat, and perhaps also that small, isolated populations are untenable in the long term"; and*
>
> *"Projects involving large scale earth works could, for example, cause more damage to Itjaritjari than their footprint might suggest if their earthworks disrupted dune connectivity and effectively fragmented Itjaritjari populations".*

The Joint Venture has referred to this submission as Submission H.4.2; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Sandhill dunnart

Issue: Sandhill dunnart information remains outstanding.

Recommendation 10: *That the proponent provides the following information to DEC for review and comment as required:*

- Local conservation status of the sandhill dunnart habitat paper.
- Results and analysis of sandhill dunnart sampling (survey work) that is currently being undertaken by Glen Gaikhorst.

Discussion

The sandhill dunnart (*Smithopsis psammophila)* is specially protected as threatened fauna under the Wildlife Conservation Act and listed as Endangered under the EPBC Act. The proposal will have a direct impact on sandhill dunnart habitat by removing the majority of two of the four habitat areas identified within the operational area. This clearing will increase the distance between identified remaining sandhill dunnart habitats from 200-900 meters, to 3,000-4,000 metres.

The proponent is undertaking a review of the local conservation status of the sandhill dunnart habitat (at present and during the life of the mine) and further survey work. Whilst no sandhill dunnarts were captured during the past surveys, this is thought to be a result of the difficulty in capturing the species, rather than an indication that sandhill dunnarts do not occupy the operational area.

The Joint Venture has referred to this submission as Submission H.4.3; the Joint Venture's response is detailed in Section 4.4 Subterranean Fauna.

Troglofauna

Issue: Troglofauna data are insufficient to adequately determine risk from this proposal.

Recommendation 11: *That the proponent provides the following information to DEC for review and comment as required.*

- Results and analysis of troglofauna sampling (survey work) that is currently being undertaken.
- Prospective troglofauna habitat risk assessment addendum.

Discussion

Two species of troglofauna (a dilpluran and a centipede) have been identified only within the proposed disturbance footprint. DEC understands that the equipment and methods used in setting the traps for the troglofauna sampling were flawed, and that the proponent has commissioned another sampling phase to rectify this, with collection due at the end of December.

Further, the Lawrence report (Appendix B20) does not adequately describe the nature, extent and continuity (connectivity) of the prospective troglofauna habitat. An addendum to Appendix B20 to clarify prospective troglofauna habitat connectivity is forthcoming.

The Joint Venture has referred to this submission as Submission H.4.4a; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Short range endemic (SRE) invertebrate fauna

Issue: The SRE invertebrate fauna community requires monitoring and adaptive management for protection.

Recommendation 12: *That the proponent develops a monitoring program to provide information on the indirect impacts from mine activities on SRE invertebrate fauna, and implements adaptive management measures to minimise impacts on these species, on the advice of, and in agreement with DEC.*

Discussion

The project area *"...is located in a region unexpectedly rich in invertebrate diversity"* (Appendix B4, page iv). The proponent is developing a monitoring program and adaptive management strategy for the SRE community in the project area. This program and strategy should be developed on the advice of, and in agreement with, DEC.

The Joint Venture has referred to this submission as Submission H.4.4b; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Issue: The information currently available on *Kwonkan* sp. 2 habitat is insufficient to adequately determine risk from this proposal.

Recommendation 13: *That the proponent provides the forthcoming Kwonkan sp. 2 habitat risk assessment addendum to DEC for review and comment.*

Discussion

Kwonkan sp. 2 has only been identified within the proposed disturbance footprint. A refined habitat assessment for this species has been compiled and an addendum is being developed. This addendum should be provided to DEC for review and comment.

The Joint Venture has referred to this submission as Submission H.4.4c; the Joint Venture's response is detailed in Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Issue: The information currently available on *Aganippe* sp. 7 is insufficient to adequately determine the impacts from this proposal.

Recommendation 14: *That the proponent provides information on the size of the Aganippe sp. 7 populations outside the impact footprint addendum for DEC review and comment.*

Discussion

Further population information is required on *Aganippe* sp. 7 to confirm that this species has a viable population outside the project footprint (west of Lake Rason paleo-drainage channel). DEC understands that this information is forthcoming from the proponent.

Flora and Vegetation

The Joint Venture has referred to this submission as Submission H.5.1; the Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

Issue: The proposed residential impacts on priority flora are significant.

Recommendation 15: *That the proponent mitigates or offsets the residual impacts on priority flora.*

Recommendation 16: *That the basis for extrapolations to estimate impacts on priority flora be provided to DEC for review and comment.*

Discussion

The proposal presents significant residual impacts on the following priority flora:

- *Acacia eremophila* variant (priority 3, 11.7 percent).
- *Acacia eremophila var. variabilis* (priority 3, 4.9 percent).
- *Daviesia purpureascens* (priority 4, 94.0 percent of local population).
- *Dicrastylis cundeeleensis* (priority 3, 46.5 percent).
- *Eucalyptus pimpiniana* (priority 3, 9.5 percent).

Lechenaultia divericata is a new record for Western Australia and the only record within the Great Victoria Desert. This species is proposed for inclusion in the priority flora list (PER, page 6-30) and any impact on this species is considered significant.

The calculated "percent" impact includes population extrapolations by the proponent. DEC has been unable to confirm the number of populations that will be impacted by the proposal as geographic information systems data have not been provided. The proponent has, however, committed to providing these extrapolations to DEC.

Vegetation Communities

The Joint Venture has referred to this submission as Submission H.6.1: The Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

Issue: The impacts on vegetation communities at a local scale are significant.

Recommendation 17: *That the proponent commits to not exceeding the stated limits of disturbance on vegetation communities S8, ExL.t2H and S4.*

Discussion

The proponent presents significant impacts on the following vegetation communities:

- S8 Low shrubland of *Acacia desertorium* var. *desertorum* with *Grevillea juncifolia,* low myrtaceous shrubs and mixed low shrubs with occasional emergent *Eucalyptus youngiana* and Eucalyptus sp. vegetation community within the PEC (9.7 percent).
- ExL.t2H mixed Eucalyptus woodlands over mixed open shrubs and *Triodia basedowii* (7.6 percent).
- S4 open heath of *Melaleuca hamata* over *Aluta maisonneuvei* subsp. *auriculata* with *Grevillea auriculata* vegetation community (14.0 percent).

Rehabilitation and Closure

The Joint Venture has referred to this submission as Submission H.7.1; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Issue: The proposal will leave a permanent water-filled void at closure. The availability of free water within the pit void may result in long-term impacts on the biodiversity of the area.

Recommendation 18: *That conditions be applied to minimise the impacts of an increase in fauna and introduced animals attracted to the post-mining water-filled void.*

Discussion

The proposal is located in as area with habitats for a high concentration of conservation significant flora, fauna and communities. An increase in threatening process could have a negative impact on these conservation significant species and communities.

Offsets

The Joint Venture has referred to this submission as Submission H.8.1; the Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

Issue: Offsets discussions between DEC and the proponent are outstanding.

Recommendation 19: *That the DEC is afforded an opportunity to advise the EPA on the outcome of the offset discussions, which are expected to be held subsequently to this submission.*

Discussion

The proponent has arranged a meeting regarding the offset proposal with DEC subsequent to this submission. Following this meeting, DEC will be able to provide advice to the EPA on the proponent's offset proposal.

Submission I: Wildflower Society Submission – Brian Moyle 24th Nov 09

The Joint Venture has referred to this submission as Submission I.1; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

A major concern for society members is that the infrastructure routes are well managed particularly with respect to clearing, fire management, feral plants and animals and rubbish dumping. It is noted in the PER the very low weed infestation that has been recorded across the area. Wildfires (probably from lightening) already have a significant impact on the area so fire management is important, both to see any prescribed burning is appropriate in scale and also that indiscriminate burning does not occur particularly along infrastructure routes. We look to these matters being addressed in operational practices and management plans. Both the plans and audits should be publicly available.

The Joint Venture has referred to this submission as Submission I.2; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Mine closure planning is important right from the commencement of the project. It is vital the government and the community are not left with a degraded environment to try to repair. We will look with interest at the final management plans for the project and believe these should be made publicly available.

The Joint Venture has referred to this submission as Submission I.3; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

As part of the assessment the company should be undertaking research into rehabilitation in the area and also the EPA should be making sure there is a sufficient bond in place to cover this matter. This is particularly necessary because of the nature of the area, little knowledge of rehabilitation in such a place and the impacts of a changing climate.

The Joint Venture has referred to this submission as Submission I.4; the Joint Venture's response is detailed in Section 4.1 Management Commitments and Offsets.

The Society has concerns about offsets and particularly those involving money provided by proponents. It is not clear what the financial component of the offset will be however we believe there is a real possibility that the State Government Department of Treasury will be taking a close look at non Consolidated Revenue Funding received or managed by government agencies and particularly the DEC. The likely consequence is that CRF funding to the DEC will be reduced by the amount received by any offset of similar arrangement. It is obvious if this happens there will be no benefit to conservation and we would probably argue there never was going to be anyway. This is particularly the case when impacts on biodiversity values are involved.

Submission J: DEC Terrestrial Ecosystems Branch Submission 24th Nov 09

The Joint Venture has referred to this submission as Submission J.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement and Section 4.4 Flora and Vegetation.

Flora and Vegetation

The proposal manages the flora and vegetation factors adequately.

The Joint Venture has referred to this submission as Submission J.2: The Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement and Section 4.4 Terrestrial Fauna including Invertebrate Fauna.

Fauna

Fauna issues are comprehensively assessed and management of fauna factors appears to be adequate.

The Joint Venture has referred to this submission as Submission J.3; the Joint Venture's response is detailed in Section 4.4 Flora and Vegetation and Terrestrial Fauna including Invertebrate Fauna.

There are a few minor technical inconsistencies in the PER but these do not detract from the overall report. These are marked on the copy of the PER which is being returned to you.

Submission K: Anonymous submission 16th Nov 09

The Joint Venture has referred to this submission as Submission K.1; the Joint Venture's response is detailed in Section 4.1 Stakeholder Engagement.

Having attended AngloGold Ashanti/Independence Group's public environmental review information session of early November 2009, we are very concerned over both the short more particularly the long term impact that the huge open pit operations will have on its surrounding flora, fauna and vegetation.

The Joint Venture has referred to this submission as Submission K.2; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

However, there appears to be little detail within chapter 10 of this report on what considerations and exactly what is proposed to be committed by Tropicana to protect and conserve the biological diversity and ecological integrity on the close out of the mine. This includes the rare species of Conospermum toddii and other flora within the Yellow/Orange Dunefields that lie immediately to the west of the proposed mining area.

The Joint Venture has referred to this submission as Submission K.3; the Joint Venture's response is detailed in Section 4.3 Soil Quality and Landform.

Given that the actual size of the 3 / 4 open pits, which if connected over time will have a length of 6 km, a width of 1.5 km and pit voids, having depths of up to 330metres, covering some 400 ha, one must question what effect the pit voids draw down of the natural water table will have on the stability of the adjacent dune fields and surrounding vegetation, particularly 50 to 199 years after commencing such a huge mining operation in this desert area.

The Joint Venture has referred to this submission as Submission K.4; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Also why are the proponents of this operations being allowed to consider leaving such a large surface area of pit voids which will be recharged forever from rain and ground water seepage and then allowed to evaporate on a seasonal cyclic basis.?? With appropriate care and planning it should be possible for a very large portion of the three / four pit voids to be backfilled progressively by mine overburden and waste from the processing plant.

The Joint Venture has referred to this submission as Submission K.5; the Joint Venture's response is detailed in Section 4.6 Rehabilitation and Closure.

Who wants to leave a second earth scar in West Australia's landscape that may yet rival the Kalgoorlie's Super Pit for it position as one of the "10 Most Incredible Earth Scars, which is currently reported to be only 3.5 km long 1.5 km wide and 360meters deep. "Ref. The Sunday Times, November 2009"

The Joint Venture has referred to this submission as Submission K.6; the Joint Venture's response is detailed in Section 4.1 Management/ Monitoring Strategies.

Please Note we are not against the mining proposal, but are very concerned over the long term repercussions of short term decisions that are frequently made because of inappropriate foresight being over ridden by promises of being able to manage the future and resolve these commitments during the final years of the mines life, and at a time when the existing owners may not even be involved in the project.

The Joint Venture has referred to this submission as Submission K.7; the Joint Venture's response is detailed in Section 4.3 Groundwater.

Our interest lie both in the mine proceeding and the continuing sustainability of the local indigenous people, the plant life, the birds and the animals who rely so heavily on the reliability of natures underground water supply and water holes throughout this semi desert land. There seems to be no protection of the natural water source being able to remain in the natural waterholes that are very important to the indigenous communities of the area.

APPENDIX 3: SUPPLEMENTARY STUDIES

See Attached CD.

APPENDIX 4: MONITORING STRATEGY

See Attached CD.

APPENDIX 5: BIODIVERSITY AND GREENHOUSE OFFSET STRATEGY

See Attached CD.

AngloGold Ashanti
Australia

360 environmental

INDEPENDENCE GROUP NL