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.