

APPENDIX A: ENVIRONMENTAL MANGEMENT PLAN

6. ENVIRONMENTAL IMPACT

6.1 Overall Objectives of the EMP

The following overall environmental objectives have been set for the TPT-2 cc Project:

- To comply with national legislation and standards for the protection of the environment.
- To limit potential impacts on biodiversity through the minimization of the footprint (as far as practically possible) and the conservation of residual habitat within the mine area.
- To keep surrounding communities informed of farming activities through the implementation of forums for communication and constructive dialogue.
- To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimization, recycling, management, temporary storage and removal of waste.
- To develop, implement and manage monitoring systems to ensure good environmental performance in respect of the following: ground and surface water, air quality, noise and vibration, biodiversity and rehabilitation.

The Management and Mitigation Plans (MMPs), listed in the table below, are applicable to all the relevant activities and facilities of the Sand Mine. (The MMPs follow in the subsequent sections).

6.2 Stakeholder Management and Mitigation

It is important that channels of communication are maintained over the life of the project for surrounding landowners, the general public members, as well as the local and traditional authorities, table 4 shows the stakeholders communication Management and Mitigation Plan.

Table 2: Actions relating to stakeholder communication

Issue	Management commitment	Phase
Understanding who the stakeholders are	Maintain and update the TPT-2 cc stakeholder register, including stakeholders' needs and expectations. Ensure that all relevant stakeholder groups are included.	All
	A representative database would include government, employees, service providers, contractors, indigenous populations, local communities, traditional authorities, NGOs, shareholders, customers, the investment sector, community-based organizations, suppliers and the media.	All
	Ensure that marginalized and vulnerable groups are also considered in the stakeholder communication process.	All
	Record partnerships as well as their roles, responsibilities, capacity and contribution to development.	All
Liaising with interested and affected parties at all phases in the mine life	Devise and implement a stakeholder communication and engagement strategy.	All
Responsibility	Theopaldt Property Two cc	

6.3 Topography Management and Mitigation

6.3.1 Issue: Security and safety impact

Impacts relating to the welfare, health and safety of the local communities may arise as a result of traffic, noise, air quality, pollution issues, etc. During the construction phase TPT-2 cc may at a minimal provide job opportunities to the local community.

Hazardous excavations and infrastructure include all structures into or off which third parties and animals can collide, fall and be harmed. In the construction and decommissioning phases these hazardous excavations and infrastructure are usually temporary in nature, usually existing for a few weeks to a few months. The operational phase will present more long-term hazardous infrastructure. It is essential that safety and security measures are defined and implemented to adequately protect the mine site from being accessed by unauthorized people.

Table 3: Hazardous excavations & infrastructure - link to phase & activities

Issue	Management commitment	Phase
Hazardous excavations	All staff will be trained to attend to third parties and animals so as to avoid situations where people and animals can enter safety risk areas.	All
Safety and Security Risks	At closure, permanent warning signs will be in place at appropriate intervals, in appropriate languages with danger pictures to warn people of any potential dangerous farm areas / equipment	All
Access to the site by unauthorized persons to the farming site	Any person entering the agricultural / cultivation and other operation areas (fields and packaging) will only be allowed after formal approval.	All
Emergency	Develop and implement an emergency response plan for third parties falling into or off hazardous excavations and causing injury.	Operational
Responsibility	Theopaldt Property Two cc	

6.4 Biodiversity Management and Mitigation

6.4.1 Issue: General physical disturbance of biodiversity

The section is a high level assessment of biodiversity impacts in line with the content of the baseline description (Section 4), and the content of the EMP (Appendix E). The assessment covers the following broad topics: physical destruction of biodiversity and related functions, impacts on surface water resources as an ecological driver, and general disturbances to biodiversity.

Table 4: Physical disturbance of biodiversity - link to phase and activities

Issue	Management commitment	Phase
Physical disruption to biodiversity by Staff	The Principle of zero tolerance to killing and collecting of biodiversity i.e. no poaching (including collection firewood) will be allowed and poaching offenders will be prosecuted.	All
	All species with a conservation and or protection status should be identified, clearly marked and preserved (by at least 50%)	Construction
Physical disruption to biodiversity by infrastructures	Erect a game-proof fence around the pit and mining operations to ensure that animals have no access to operation areas, which may be contaminated by agricultural chemicals.	All
	Upon completing construction, initiate restoration of all infrastructure including roads areas that were only impacted during construction and will not be required for farming operation	Operation, decommissioning and closure
Emergency	Certain instances of injury to animals may be considered emergency situations. These will be managed in accordance with the TPT-2 cc Investment emergency response procedure.	All
Responsibility	Theopaldt Property Two cc	

6.5 Water Resources Management and Mitigation

6.5.1 Issue: Altering and pollution of Surface and groundwater

The altering and obstructing of surface water drainage (change in water flow and gully erosion of the river beds from channeling of water) is identified as a potential impact associated with the proposed activities, as well as water pollution i.e. through the change to surface water and nutrient flow.

There are a number of pollution sources in all project phases that have the potential to pollute surface and groundwater, particularly in the unmitigated scenario. In the construction and decommissioning phases these potential pollution sources are temporary in nature, usually existing for a few weeks to a few months. Although these sources may be temporary, the potential pollution may be long term. The operational phase will present more long-term potential sources.

Table 5: Altering surface drainage patterns –link to operation phases and activities

Issue	Management commitment	Phase
Blocking or deviation of water flow	Minimize infrastructure footprint and construction footprint	
	Avoid placing any infrastructure or waste material across drainage lines. Where unavoidable ensure uninterrupted drainage by constructing bypass channels.	
Loss of surface water, and change of drainage patterns	Do not place service infrastructure in ecologically sensitive areas, or in areas identified as corridors of animal movement.	
Natural flow of storm water (clean and dirty)	Design all storm water interventions in such a way that storm water can bypass the major structures.	
	Ensure that these facilitates are designed, constructed and operated that flood protection is provided.	
Responsibility	Theopaldt Property Two cc	

6.6 Air and Noise Management and Mitigation

6.6.1 Issue: Air and noise pollution

Clearing work, cultivation (soil tillage) and herbicides / parasites spraying on site is likely to create very little dust and other possible pollutants that may contribute although little to air pollution. This may be an unwanted change to the community of the area.

Table 6: Air pollution – link to phase and activities

Issue	Management commitment	Phase
Air pollution impact to Biodiversity and nearby Human community	All design mitigation measures to be implemented (including water sprays on all roads and temporary unpaved farm roads, waters sprays at highly polluting areas (activity sites))	All
	All diesel powered equipment and plant vehicles should be kept at a high level of maintenance. Any change in the noise emission characteristics of equipment should serve as trigger for withdrawing it for maintenance.	All
Impact of noise on the environment/ sensitive receptors	Document and investigate all registered complaints and make efforts to address the area of concern where possible. A mechanism to monitor noise levels, record and respond complaints and mitigate impacts should be developed.	All
Responsibility	Theopaldt Property Two cc	

6.7 Socio-Economic Management and Mitigation

6.7.1 Issue: Economic impacts on local livelihoods

The activities associated with the TPT-2 cc's sand mining have socio-economic impacts in all phases – some positive and some negative. These impacts related to amongst others employment/job creation, local and regional economies, land use and surrounding landowners and community safety and security. During the construction phase TPT-2 cc may at a minimal provide job opportunities to the local community. This EMP aims to provide measures to enhance the positive impacts and limit the negatives impacts.

Table 7: Health and safety – link to phase and activities/infrastructure

Issue	Management commitment	Phase
Impacts on livelihood resettlement	Engage with the affected communities through a process of informed consultation and participation to reach consensus on any activities that affect them.	All
	Provide affected people with necessary transitional support (such as short-term employment, subsistence support, or salary maintenance).	Construction
Impacts on HIV / AIDS	Preparation of a health and safety plan for workers and impacted communities addressing issues including education on measures to prevent the spread of HIV/AIDS through awareness campaigns, provision of safety equipment for workers, child Labour prohibited	All
Responsibility	Theopaldt Property Two cc	