ENVIRONMENTAL MANAGEMENT PLAN FOR THE ABSTRACTION OF WATER FROM THE ORANGE RIVER TO NAMIBIA TANTALITE MINE

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Abbreviations

Abbreviations	Meaning
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ER	Employee Representative
I&AP	Interested and Affected Parties
MET	Ministry of Environment and Tourism

1. INTRODUCTION

The Namibia Tantalite Investments (Pty) Ltd mines Tantalite Ore at 110 Umeis Farm in Warmbad currently depends on boreholes for supply of water for mining purpose and for human consumption.

The Environmental Management Programme (EMP) is a set of feasible and cost-effective mitigation, monitoring and institutional measures to avoid adverse environmental and social impacts, reduce them to acceptable levels or to compensate for them. This EMP covers all adverse environmental impacts, including any that may result from disturbance of farming activities. The EMP provides the technical details for each mitigation, monitoring and institutional measure, including the impact(s) to which it relates and the conditions when it is required, together with designs, equipment descriptions and operating procedures. Where necessary, the EMP specifies for each mitigation measure timing, cost, locations, and institution responsible.

The EMP specifies the monitoring objectives and the types of monitoring needed to ensure that the mitigation measures have been put in place and are working as intended, plus any other monitoring of the environmental and social aspects that is considered appropriate to ensure that unanticipated impacts do not occur. The EMP also specifies the monitoring and reporting procedures to ensure early detection of issues and provide information on progress and results of mitigation. This plan will also help the developer map out progress toward achieving continual improvements.

The development an Environmental Management Plan is a requirement for any EIA project as per Namibia's Environmental Management Act No.7 of 2007. Therefore this EMP is a legal document that must accompany the EIA Report before an Environmental Clearance is issued.

The purpose of this EMP is to ensure that the environmental impacts of the activities associated with laying of pipes from the river to the mine are managed, mitigated and

kept minimum during the lifespan of the abstraction process. This document is binding on the Project Proponent, all contractors and sub-contractors and visitors to the site. It must be included as part of any tender documents as well as contractual documents between the Project Proponent and any contractors.

This EMP:

• identifies project activities that could cause environmental damage (risks) and provides a summary of actions required;

• identifies institutions responsible for ensuring compliance with the EMP and provides their contact information;

• provides standard procedures to avoid, minimise and mitigate the identified negative environmental impacts and to enhance the positive impact of the project on the environment;

• provides for site and project specific rules and actions required;

• forms a written record of procedures, responsibilities, requirements and rules for contractor/s, their staff and any other person who must comply with the EMP;

• provides a monitoring and auditing programme to track and record compliance and identify and respond to any potential or actual negative environmental impacts; and

• provides a monitoring programme to record any mitigation measures that are implemented;

1.1 EMP Administration

For the general provisions of this EMP to be fully implemented there is a strong need to clearly outline the roles and responsibilities of all stakeholders. There is also a need for NTI and its project managers/contractors to appoint an overall responsible person to ensure the successful implementation of the EMP. The responsible person needs to be someone who has a basic understanding of EMP administration. Under the

management actions, each action is allocated to a responsible entity to ensure that the specific action is managed and documented properly.

Furthermore, all key role players such as contractors who will be involved during the installation of equipment at the project sites must be informed about the contents of this EMP and activities to be undertaken to mitigate the potential impacts identified.

Any new developments that will occur during the implementation of this project that might have potential impacts on the environment should trigger further adjustments and revision of this EMP to ensure that all potential threats to the environment are addressed on an ongoing basis.

1.2 Management Actions

1.2.1 Generic Management Action

In many instances, maintenance work undertaken at places such as water supply pipelines does not require an Environmental Impact Assessment and hence is not generally guided by an EMP. However, in order to ensure that such water supply pipelines are effectively maintained and that maintenance works are carried out in a responsible fashion and that they do not pose any risks to the environment or human health and wellbeing, it is recommended that the following general management actions be included in this EMP.

1.2.2 Record Keeping

Record keeping is an essential part of effective infrastructure management. NTI should establish an effective monitoring and record keeping system for the duration of the operational phase of its water supply pipelines. The purpose of this is to ensure the effective management and maintenance of all structures and infrastructure, and to ensure the effective implementation of these general operational measures as required by the law in order to ensure the on-going sustainability of operations. The following is a brief guide to the type of records that should be kept.

• **Manufacturer's operational and maintenance guidelines on pumps:** The manufacturer's guidelines need to be thoroughly read, understood and implemented. They should also be kept on file for on-going reference. Where specialists are required to fulfil certain functions, they should be identified up front and suitably contracted to perform the required functions in accordance with the manufacturer's specifications.

• **Plans:** There should be a complete record of drawings and plans of the water supply pipeline showing the layout, size, shape, and details of all components of the pipeline, particularly for buried items such as pipelines. When problems occur or modifications are planned, the drawings will be a most valuable source of information. They should be kept up to date by marking up all changes, i.e. omissions and additions to the pipeline.

• **Maintenance:** Maintenance records are of vital importance. Details of any maintenance carried out in any component of the pump station should be entered in the maintenance log sheets designed for the purpose.

• **Daily log:** A large, page-a-day diary will serve for this purpose and any information which does not logically fit in some other record must be entered in the diary. Typical examples are weather conditions, temperature, peculiar circumstances and problems encountered.

• **Performance Records:** Testing is necessary to ensure that pump station and pipelines are operating effectively and to this end pipes need to be regularly monitored to ensure that there is no leakage etc.

• **Environmental, public health and safety education:** Set up an Educational

Programme that is led by an Environmental Educator for NTI staff and community members living in proximity to the pump station to promote wise environmental management and ensuring public health and safety. The programme should discuss with staff, community members and local leadership structures the role that they can and need to play with maintaining and securing the pump stations e.g. reporting

vandalisms, non-functioning safety lights or other faulty equipment, etc. It needs to be clear who they should report what to and what everyone's responsibility is in this regard. The programme should seek to empower people and build pride amongst staff community members and local leadership structures.

- **Record from monitoring of the river and water levels quality:** Investigation of the river quality and flow of water to assess if there are any significant change after abstraction of water. This needs to be determined early so that measures could be put in place i.e. switching to boreholes to allow the river to recharge.

Monitoring and Evaluation

This section of the EMP is aimed at providing the monitoring and reporting procedures to ensure early detection of issues and provide information on progress and results of mitigation.

The main objective of this EMP's monitoring program is to ensure that the mitigation measures that have been put in place are working as intended to ensure that unanticipated environmental impacts do not occur. The effectiveness of the mitigation measures should also be evaluated to and adjusted accordingly.

The person to be appointed by NTI to take the overall responsibly of ensuring that the EMP is fully implemented must also monitor the implementation of the EMP and keep records on an throughout the duration of the project. Monthly monitoring report on the implementation of the EMP must be compiled and filed using the pro-forma provided below:

The development of EMP is a requirement for any EIA project as per Namibia's Environmental Management Act (7 of 2007). Therefore this EMP is a legal document that must accompany the EIA Report before an Environmental Clearance is issued. The EIA process comprised a full Scoping process that included an assessment of all potential environmental impacts as identified through the process. Section 8 (j) of the EIA Regulations require that an EMP is submitted as part of the Scoping Report so that

these documents can be considered simultaneously. The EMP has been included in the Scoping Report to provide a link between the impacts identified in the EIA Process and the required environmental management on the ground during project implementation and operation. The main purpose of this EMP is to guide environmental management throughout the life-cycle stages of the construction of fuel storage Facility and to:

- Minimize adverse impacts on the environment;
- Protect the environmental quality of the site;
- Meet the requirements of all national and local legislations;
- Outline guidelines for construction of services and operational phase of the project.
- Provide detailed specifications (table 2) for the management and mitigation of activities that have the potential to impact negatively on the environment.

This EMP describes the mitigation and monitoring measures to be implemented during the following phases of these developments:

- **Construction Tender Preparation** – the period during which the proponent, having secured the necessary legislative and administrative arrangements, prepare construction tender documents for the development of services infrastructure to service the various erven as well as any other construction process(s) within the development areas;
- **Construction** – the period during which the laying of pipes from the river to the mine and construction of the solar pump;
- **Operation and Maintenance** – the period during which the water supply system will be fully operational.

2. RESPONSIBILITIES

The responsibility for the implementation of the EMP ultimately lies with the proponent (African Tantalum (Pty) Ltd), who are also responsible for the eventual operation of the Mine. The implementation of this EMP requires the involvement of several key individuals, each fulfilling a different but vital role to ensure sound environmental management during each phase of these developments.

The Developer (African Tantalum (Pty) Ltd) should appoint an Employer's Representative (ER) to oversee all aspects of these developments for all development phases (including all contracts for work outsourced). The Developer may decide to assign this role to one person for the full duration of these developments, or may assign an ER to each of the development phases – i.e. one for the Planning and Design Phase, one for the Construction Phase and one for the Operational and Maintenance Phase. The ER will in turn appoint an Environmental Control Officer (ECO) to oversee the implementation of the whole EMP during the Construction and Operation and Maintenance Phases. Again, the ER (and/or the Developer) may decide to assign this role to one person for both phases, or may assign a different ECO for each phase – i.e. one for the Construction Phase and another for the Operation and Maintenance Phase. The following positions and their respective responsibilities are outlined below:

- Employer's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

2.1. Employer's Representative

The ER is appointed by the Developer to manage all contracts for work/services that are outsourced during all development phases. Any official communication regarding work agreements is delivered through this person. The ER should with the commencement of the project appoint a competent ECO who will represent the Developer on-site.

During the Planning and Design and Construction Tender Preparation Phase, the ER will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorisations have been obtained (see Table 1);
- Developing, managing implementation of and maintaining all Development Guidelines;
- Ensure that the management requirements included in Table 2 inform the planning and design of the relevant infrastructure developments (i.e. that these requirements are considered during the Planning and Design Phase not as an afterthought); and
- Ensure that the management requirements included in Table 2 inform the preparation of tender documents for the construction of the relevant infrastructure developments.

During the Construction and Operation and Maintenance Phases the ER shall assist the ECO where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorizations and permits (see Table 1) have been obtained by the Contractor;
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO where necessary;
- Ordering the removal of individuals and/or equipment not complying with the EMP;
- Issuing fines for transgression of site rules and penalties for contravention of the EMP; and
- Providing input into the ECO's ongoing internal review of the EMP. This review report should be submitted on a monthly basis to the Developer.

Theme	Legislation Instrument	Management Requirements
Archeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Environmental	Environmental Management Act (EMA) 7 of 2007 EIA Regulations (EIAR) (GN) No. 28/2007 (GG No. 4878)	The amendment, transfer or renewal of the Environmental Clearance Certificate (ECC) (EMA S39-42; EIAR S19 & 20). Amendments to this EMP will require an amendment of the ECC for these developments.
	"List of activities that may not be undertaken without ECC" GG No. 4878 GN No. 29	Any activities listed in this listing notice require an ECC and hence an Environmental Assessment.
Labour	Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.
Roads	Roads Ordinance 17	• Width of proclaimed roads and road reserve boundaries (S3.1) • Control of traffic on urban trunk and main roads (S27.1) • Rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads (S36.1) • Infringements and obstructions on and interference with proclaimed roads. (S37.1) • Distance from proclaimed roads at which fences are erected (S38)
Water	Water Act 54 of 1956	Section 21 details provisions relating to effluent discharge permits.
	Water Quality Guidelines for Drinking Water and Waste Water Treatment	Details specific quantities in terms of water quality determinants, which waste water should be treated to before being discharged into the environment

Table 1: Relevant guidelines and legislated permit requirements

2.2. Environmental Control Officer (ECO)

The ECO should be a competent person appointed by the ER. The ECO is the Developer's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Contractor. If no ECO is appointed, then the duties of the ECO shall fall upon the ER.

During the Construction Phase and Operation and Maintenance Phase the ECO's duties include the following:

- Assisting the ER in ensuring that the necessary legal authorisations have been obtained;
- Maintaining open and direct lines of communication between the ER, Developer, the Construction and/or Operations and Maintenance Contractor, and Interested and Affected Parties (I&APs) with regard to this EMP and matters incidental thereto;
- Monthly site inspection of all construction and/or infrastructure maintenance areas with regard to compliance with this EMP;
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- Taking appropriate action if the specifications of the EMP are not adhered to;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER;
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking an annual review of the EMP.

2.3. Contractor (Construction and Operations and Maintenance)

The Contractor is responsible for the implementation of the EMP, on-site monitoring and evaluation of the EMP. It is envisaged that various contractors might be appointed at various periods for various tasks throughout the life cycle (construction through to decommissioning phase) of this project. These can be broadly grouped into Construction Contractors and Operations and Maintenance Contractors. In order to ensure sound environmental management, the relevant sections of this EMP should be included in all contracts of work outsourced thus legally binding all appointed contractors and sub-contractors. All contractors shall ensure that adequate environmental awareness training of senior site personnel takes place and that all construction workers and newcomers receive an induction presentation on the

importance and implications of the EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

The Contractor should keep records of all environmental training sessions, including names, dates and the information presented.

3. SUMMARY OF ENVIRONMENTAL IMPACTS & PROPOSED MITIGATION MEASURES

3.1. Construction Tender Preparation

The management requirements described below should be consulted and carried out when the construction tender documents for the services infrastructure are prepared.

Aspect	Management Requirements
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for the implementation of the EMP: • Construction of services infrastructure / laying of pipelines • Maintenance of services infrastructure / water pipe lines.
Financial provision	• Financial provision for the compilation of a Waste Management Plan should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. • Financial provision for topsoil management and the rehabilitation of exhausted borrow pits should be included as a cost item within construction tender documents. • Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase should be included as a cost item within construction tender documents. • Financial provision for the facilitation of an induction programme for both senior, temporary construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. • Financial provision for the compilation of a Tree Management Plan should be included as a cost item within construction tender documents. • Financial provision for the drafting of a Communication Plan should be included as a cost item within construction tender documents.
Recruitment	• Provisions designed to maximize the use of local labour should be included within tender documents concerning the construction and/or maintenance of services infrastructure. • A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. • Specific recruitment procedures ensuring qualified local companies enjoy preference during tender adjudication should be included within tenders concerning the construction and/or maintenance of services infrastructure. • Provisions promoting gender equality pertaining to recruitment should be included within tender documents concerning the construction and/or maintenance of services infrastructure. • Women should be given preference for certain unskilled jobs (e.g. flag bearers)

Table 2: Construction Tender Preparation Requirements

3.2. Construction Phase

Table 3 below provides mitigation measures for the various environmental aspects identified in the EIA report.

Aspect Description	Mitigation Measure	Responsibility
Aesthetic (Change in landscape) / Sense of place	The town strategic development plan is assessed for its impact on sense of place. Indicators: • An expert assesses the effects of the current strategic development plan on sense of place; • The current development plan is amended to consider sense of place.	African Tantalum (Pty) Ltd
Employment Creation (Influx of job seekers)	The Contractor should compile a formal recruitment process including the following provisions as a minimum: • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those who are qualified and from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contracts (e.g. period of employment etc.) – make use of interpreters where necessary.	Contractor
Health & Safety related impacts	• No human waste should come in contact with open soil. Every construction site should have at least one portable toilet. • Only one or two security guards may reside/sleep on-site during construction. No other construction personnel may sleep/reside on-site. • No open fires may be made anywhere on-site during the construction period. Heating and cooking facilities (where necessary) should be provided by the Contractor.	Contractor
Noise and Vibration	• All workers on site must be equipped with ear plugs to be used when the noise becomes unbearable. • Switch off machines that are not used. • Construction activities which known to generate vibration should be scheduled for day periods and not at night. • Duration of vibration should be kept as short as possible. • Proper maintenance including routine servicing of equipment.	Safety Officer / ECO

Aspect Description	Mitigation Measure	Responsibility
Dust	• Equip all the workers exposed to dust with dust masks; • Spray the areas that are mostly affected with water to minimize dust; • Minimize activities that can generate dust during windy days; • Limit the speed within the whole construction area to a maximum of 40 km/h; • Dust will significantly be reduced if excavation and land clearing is carried out after it has rained and the soil is wet.	Site Manager and Environmental Control Officer
Conservation and Vegetation (Soil Erosion)	• The layout and building design should incorporate existing trees (a "tree" is defined as an indigenous woody perennial plant with a trunk diameter ≥150 mm). • The Contractor should compile a Tree Management Plan which should include the following as a minimum: - Trees (as defined above) if not already accounted for in an existing GIS, should be surveyed, co-ordinates/location incorporated into the Contractor's GIS, marked with paint (or other means so as to be readily visible) and protected; - Trees, which are impossible to conserve, need to be identified and their location recorded on a map; - The Contractor should apply to the local authority for a permit remove these trees. - A list should be compiled of all trees to be removed detailing the erf on which they are located, the species as well as which trees will be planted to replace these. The nursery where these trees will be sourced from should also be included; - Each tree that is removed needs to be replaced after construction; • Only a limited width +/- 5 m on the side of roads may be partially cleared of vegetation.	Contractor, African Tantalum (Pty) Ltd
Impact on water resources	• Machinery should not be serviced on site to avoid spills. All spills should be cleaned up as soon as possible. • Hydrocarbon/chemical contaminated soil; clothing or equipment should not be washed within 25m of any water body.	Contractor, African Tantalum (Pty) Ltd
Waste generation	• Contaminated soil must be removed and disposed off at the hazardous landfill. • The contractor must provide containers on-site, to store any hazardous waste produced. • Waste skips must be provided at the construction sites as well as the construction camps • It is the responsibility of the Contractor to ensure that workers put the rubbish in the waste skips / bins provided.	African Tantalum (Pty) Ltd
Groundwater impacts	• Prevent spillages of any chemical or fuel.	Contractor, African Tantalum (Pty) Ltd

Aspect Description	Mitigation Measure	Responsibility
	• No maintenance of machinery may be done at the project location. • Maintenance should be done on dedicated areas with linings or concrete floor.	
Ablution facilities	• Portable toilets must be provided on site during construction (maximum ratio of 1 toilet per 15 people). • It is the responsibility of the Contractor to ensure that workers make use of the provided toilets and not the natural environment.	African Tantalum (Pty) Ltd, Contractor

Table 3: Construction Phase Mitigation Measures

3.3. Operational Phase

Aspect Description	Mitigation Measure	Responsibility
Traffic Congestion	• Introduce traffic calming measures on strategic routes near the Facility. • Delivery of fuel products by heavy-duty tankers should be limited to normal working hours (07h00 – 19h00).	African Tantalum (Pty) Ltd
Impact on Water resources	• The municipality reinforces water awareness by including a message relating to water saving on their monthly municipal accounts. • All spills should be cleaned up as soon as possible. The presence of an emergency response plan and suitable equipment is advised, so as to react to any spillage or leakages properly and efficiently.	African Tantalum (Pty) Ltd
Groundwater impacts	• All surface spillages and leakages must be cleaned up immediately. • Proper containment structures should be constructed to avoid any possible leakages. •	African Tantalum (Pty) Ltd
Waste Generation	• The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognized (municipal) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. • A sufficient number of separate bins for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitized to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project.	Contractor

Aspect Description	Mitigation Measure	Responsibility
Noise	• Delivery of fuel products by heavy-duty tankers should be limited to normal working hours (07h00 to 19h00). • Loud music from vehicles fuelling up should be restricted.	African Tantalum (Pty) Ltd, Contractor
Dust	• Heavy duty construction trucks (machines) shall NOT be allowed on these streets other those for waste removal. • Constant rehabilitation of the road must be implemented.	African Tantalum (Pty) Ltd Contractor
Flooding	A Storm water Management Plan should be developed by the Developer for all planned development and should address as a minimum the following: • Ensure that the storm water system is separate from the sewerage system. • Canalizing of run-off with concrete should be avoided as far as possible and natural run-off surfaces utilized or enhanced. • Storm water channels should be accommodated next to roads in the reserve. • Where practical/feasible consider soft/permeable road shoulder options – minimise paved or impermeable areas. • Run-off from areas where surface water might become contaminated should be captured, detained and treated to sewage effluent standards.	African Tantalum (Pty) Ltd
Increase Crime	Policing Neighborhood Watches	African Tantalum (Pty) Ltd
Soil Contamination	• All heavy construction vehicles and equipment on site should be provided with a drip tray. - Drip trays are to be transported with vehicles wherever they go. - Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. • All heavy construction vehicles should be maintained regularly to prevent oil leakages. • Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - The workshop area should be lined with concrete and sloped so as to collect and detain all run-off. - The workshop should have an oil-water separator for collected run-off from washing. • Spilled cement and/or concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. • All hazardous substances (e.g. fuel etc.) or chemicals should be stored in a specific location on an impermeable surface that is bunded.	African Tantalum (Pty) Ltd, Contractor

Table 4: Operational Phase Mitigation Measures

3.4. Decommissioning Phase

The permanent closure of the Fuel Storage Facility is not envisaged. However, in the event that it needs to be decommissioned the following mitigation measures should be adhered to.

Aspect Description	Mitigation Measure	Responsibility
Construction related activities	• Many of the mitigation measures prescribed for construction activity for these developments (see construction phase mitigation measures) would be applicable to some of the decommissioning activities. These should be adhered to where applicable.	African Tantalum (Pty) Ltd
Rehabilitation	• Upon completion of the construction phase consultations should be held with the property owner(s) regarding the post-construction use of exhausted borrow pits. • In the event that no post-construction uses are requested, all exhausted borrow pits and excavated areas need to be rehabilitated as follows: - Borrow pits and excavated areas may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. - Rehabilitated borrow pits and excavated areas need to match the contours of the existing landscape. - The rehabilitated area should not be higher (or lower) than nearby drainage channels. This ensures the efficiency of revegetation and reduces the chances of potential erosion. - Topsoil is to be spread across borrow pit and excavated areas evenly. - Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. - Ripping should be done along slopes, not up and down a slope which could lead to enhanced erosion. Rehabilitated borrow pits need to remain fenced-off after the decommissioning of the project to prevent livestock from denuding the newly established vegetation on the area. -	African Tantalum (Pty) Ltd

Table 5: Decommissioning Phase Mitigation Measures

4. CONCLUSION AND RECOMMENDATIONS

The EMP must be regarded as a living document and changes must be made to the EMP as required by African Tantalum (Pty) Ltd and The Contractor, while retaining the underlying principles and objectives on which the document is based. The compilation of the EMP has incorporated impacts and mitigation measures from the Scoping Report as well as incorporating principles of best practice in terms of environmental management.

Various impacts of activities within the identified site on the environment were identified. It is acknowledged that implementation of some measures would require substantial time and / or financial resources, while others are achievable within operational norms. African Tantalum (Pty) Ltd can thus decide on the prioritization of mitigation measures according to their resource capacity within the institution.