ENVIRONMENTAL MANAGEMENT PLAN FOR PROPOSED ESTABLISHMENT OF LITHIUM MINE ON MINING LICENCE (ML243), OMARURU, ERONGO REGION

Prepared by:

Minera-XploreConsultancy

Minera-Xplore Consultancy CC
P.O. Box 31671, Windhoek,
Namibia
Tel: (+264)085 761 4750/
/(+264) 81 443 6236

Proponent:

Xinfeng Investment (PTY) Ltd
P.O. Box 41497
Windhoek, Namibia
+264 81 468 5578

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Proponent	Xinfeng Investment (PTY) Ltd P.O. Box 41497, Windhoek, Namibia Contact Person: Zhou Hao Contact Number:+264 81 468 5578 Email:lixuanfaith@yahoo.com		
Environmental Practitioner	Minera-Xplore Consultancy CC P.O. Box 31671, Pionierspark, Windhoek ,Namibia Contact Person: Ms Nangula Ndakunda Contact Number: (+264)085 761 4750/(+264) 81 443 6236 Email:info@minera-xplore.com		
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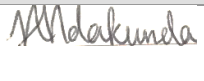
Author	Nangula Ndakunda		01 February 2022

8. Environmental Management Plan (EMP)

8.1 Overview

8.1.1. Purpose of this Environmental Management Plan (EMP)

Environmental management plan (EMP) serves as a risk strategy that contains logical framework, monitoring programs, mitigation measures and management control. The aim of an Environmental Management plan (EMP) is to develop procedures to implement project's mitigation measures and monitoring requirements. An EMP ensures the community that the environmental management of the project is acceptable. As well as stipulating the roles and responsibilities of persons involved in the project. It further ensures that legal and policy requirements are well known and understood by the proponent, its employees and contractors and will be strictly enforced by its management team. Issues and concerns identified in the EIA will form a set of environmental specifications that will be implemented on site.

The control measures described in this EMP have been developed following consideration of the findings of the Environmental Impact Study (EIS), which concluded that a number of environmental values would be impacted by the proposed exploration activities. The intent of the proposed control measures is to ensure that project related activities will not negatively affect the environment or the health, welfare and amenity of people and land uses by meeting or exceeding statutory requirements.

This EMP is a live document and shall be reviewed at predetermined intervals, and/or updated during the ESIA process when / if the scope of work alters, or when further data/information is added. All personnel working on the project will be legally required to comply with the requirements set out in the Final Draft EMP that is approved by MEFT

Furthermore, overall objectives of this EMP are:

- To develop measures that will mitigate the adverse impacts of the proposed project
- Ensuring compliance with regulatory authority stipulations and guidelines
- To formulate measures to enhance the value of environmental components where possible.

- To formulate measures to protect environmental resources as well enhance the value of environmental components where possible.
- Responding to unforeseen events and providing feedback for continual improvement in environmental performance.

8.1.2. Summary of the proposed activities

The proponent has applied for a mining licence (ML242) on exclusive prospecting licence (EPL 7228) in order to develop a Lithium Mine. Lithium exploration and mining activities have potential impacts on the following:

- Potential land or soil disturbances,
- Soil and water resources contamination,
- Biodiversity (fauna and flora),
- Air quality,
- Noise,
- Health and safety,
- Vehicular traffic impact,
- Archaeological impact.

8.1.3. Project Phases Covered in the EMP

The following phases are addressed in this EMP:

- Exploration phase: the phase where the lithium mineral resource is established and the quantity of availability.
- **Construction phase:** The initial phase which entails construction of main and supporting mining infrastructures (Mine Development).
- **Operation and maintenance phase:** the phase during which the mining activities are carried out and maintenance of the site, related infrastructure, equipment and machinery is done.

- **The decommissioning phase** is the time during which the targeted ore deposit is depleted or of no longer economic value, leading to the cessation of the mining activities. During the operational phase and before decommissioning, the Proponent will need to put site rehabilitation measures in place. The decommissioning phase is followed by mine closure and aftercare

8.1.4 Legal Implications and obligations under the EMP

The EMP will be sent to the Directorate of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT) for approval. Once the DEA is satisfied with the contents of the EMP, they will issue an Environmental Clearance Certificate (ECC) to the Proponent to commence with the establishment of a lithium mine in the proposed area. The ECC is linked with the recommendations of the Environmental Management Plan. Once the ECC is issued, the EMP becomes a legally binding document and each role-player including contractors and sub-contractors are made responsible to implement the relevant sections of the EMP and is required to abide by the conditions stipulated in this document. This document is a live document, which will be review and updated as needed.

8.1.5 Environmental Management Principles

The proponent will ensure that all parties involved in the project uphold the following broad aims:

1. All persons will be required to conduct all their activities in a manner that is environmentally and socially responsible. This includes all consultants, contractors, and sub-contractors, transport drivers, guests and anyone entering the mining areas in connection with the Lithium mine project.

2. Health, Safety and Social Well Being

- ❖ Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against natural dangers on site, and radiation hazards; and,
- ❖ Promote good relationships with the local authorities and their staff.

3. Biophysical Environment

- ❖ Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
- ❖ Prevent or minimize environmental impacts;
- ❖ Prevent air, water, and soil pollution, Biodiversity conservation and Due respect for the purpose and sanctity of the area.

To achieve these aims, the following principles need to be upheld.

Commitment and Accountability:

The proponent's senior executives and line managers will be held responsible and accountable for: Health and safety of site personnel while on duty, including traveling to and from site in company vehicles and environmental impacts caused by mining or by personnel engaged in the mining activities, including any recreational activities carried out by personnel in the area

Competence

The proponent will ensure a competent work force through appropriate selection, training, and awareness in all safety, health and environmental matters.

Risk Assessment, Prevention and Control

This is to identify, assess and prioritize potential environmental risks associated with the mining activities at EPL 7228. The main objective of is to prevent or minimize priority risks through careful planning and design, allocation of financial resources, management and workplace procedures. In cases where the event of adverse impacts arises, a prompt intervention by the

proponent will be done and a through procedure of how this will be done will be outlined in the safety and management policies of the proponent's profile.

Performance and Evaluation

Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies and the environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.

Stakeholder Consultation

Create and maintain opportunities for constructive consultations with employees, authorities, other interested or affected parties. Seek to achieve open exchange of information and mutual understanding in matters of common concern.

Continual Improvement

This will be done through continual evaluation, feedbacks from the stakeholders, and innovation by the proponent, to seek to improve performance regarding social health and well-being and environmental management throughout the lifespan of the mining project

8.2. Identified impacts, monitoring and proposed mitigation measures

8.2.1. Positive social-economic impacts

8.2.1.1. Job Creation

Local recruitment will be encouraged by the proponent with a target of at least 65% locals. This operation thus contributes to the alleviation of unemployment which is severe in the country. The establishment and operation of the mine will create both direct and indirect jobs to the local people. Employment on the new project will be attractive to the local workforce by virtue of the comparatively high wages offered, this will result in the local growth in the economy of the Omaruru district.

Enhancement measures

- The proponent will introduce training programs (bursary schemes, on the job training etc) in order to boost the supply of local skills
- It is proposed that local people community members from Omaruru and surrounding areas should be considered first for employed. Especially where no specific skills are required.
- The assistance by the public to assist with the recruitment of workers.
- Gender equality considerations during recruitment process.
- Employment preference will be afforded to previously disadvantaged Namibians.

8.2.1.2. Support to local retailer shop

Mining is the highest foreign currency earner and GDP contributor to the Namibian economy, therefore the presence of mining activities near local authorities stand to benefit the local economies from project-related purchases, for example, the retail, accommodation and recreation sectors. The proponent and his employees are encouraged to purchase or support local retailers in Omaruru town unless the intended material/product to purchase is not available.

8.2.1.3. Export taxes and VAT payments

Export taxes and VAT payments contribute significantly to the national economic contribution. Thus, without these payments our government will not be able to roll out the project on infrastructure, being it water, road or electricity and also sanitation facilities nationwide. The proponent and his employees are encouraged to make these payments when applicable to support the economic growth of the country.

8.2.2. Impacts on bio-physical environment

8.2.2.1. Liquid waste: oil spillage and wastewater

This can be spills from the storage of waste oil or waste water. It can also be due to transportation of this oil spill.

Mitigation Measures to be enforced:

- Ensure adequate storage and handling of liquid waste, fuel, waste water as well as regular maintenance of plant equipment.
- Avail a spill response action plan in case of accident.
- Accessibility to spill prevention and response equipment, such equipment should be visible and accessible to all employees at any given time.
- Spills will be cleaned up immediately to the satisfaction of the Environmental Manager by

  removing the spillage together with the polluted soil and by disposing of them at a recognized facility as stipulated in the spill response action plan.
- Designated waste collection tanks should be available on-site and away from waterways, and such isolation should be maintained at all times.
- Storage of the hazardous substances in a bounded area,
- Refuel vehicles at a designated area that has a protective surface covering/geo-membrane lining and utilize drip trays for stationary plant.

8.2.2.2 Impacts on surface and ground water

Mitigation Measures to be enforced:

- No dumping of waste products of any kind in or in close proximity to surface water bodies and possible recharge areas for groundwater.
- No direct handling of waste in close proximity of such areas.
- Heavy mining vehicles should be kept out of any surface water bodies and the movement of vehicles should be limited where possible to the existing roads and tracks.
- Ensure that oil/ fuel spillages from vehicles transporting the ore and machinery are minimized and that where these occur, that they are appropriately dealt with.
- Drip trays must be placed underneath vehicles when not in use to contain all oil that might be leaking from these vehicles.

- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bund walls that can contain 110%ofthevolume of the hazardous substances.
- All refueling and any maintenance of vehicles will take place on impermeable surfaces.
- Pollution will be prevented through basic infrastructure design and through maintenance of equipment.
- Spill kits will be readily available on site. Employees and/or contractors will be trained to use the spill kits to enable containment and remediation of pollution incidents.
- Environmental awareness for contractor and employees to be included during inductions
- Any spills will be contained and cleaned up immediately
- Non-toxic and biodegradable drilling lubricant will be used

8.2.2.3. Solid waste

Solid waste is a challenge during the ongoing exploration and operational phases. It can be generated from contractors, staff members and other visitors to the area. Proper solid waste management will involve full commitment by all the employees and contractors on site. Solid waste which will be generated from this project if not managed will have effects and will alter the natural environment.

Mitigation Measures to be enforced:

- Sufficient waste storage bins on site.
- Regular emptying of the waste storage bins, a minimum of two (2) times a week.
- Sufficient waste disposal sites should be established on-site were generated waste should be kept during ongoing exploration and operation period.
- The collected solid waste should be disposed at registered and approved disposal site agreed upon by both Omaruru Municipality and the proponent.
- During the construction phase, the mobile toilet should be made available on-site for workers and once these facilities are full, the collected

waste should be disposed at the Town Council waste water disposal site.

- It is recommended that waste from the temporary toilets be pumped out and disposed of at the designated waste treatment site in Omaruru or in a nearby approved facility.
- Mandatory waste segregated right at the source of waste generation. The collection of segregated waste would be made from the site and amenity areas.
- Reusable and recyclable waste will be disposed of by selling to scrap dealers and private contractors for resale.
- Non-degradable waste will be transferred to the municipal solid waste management system.
- Waste generated will be handled in accordance with the contract signed with the landowner. This shall include: waste should be separated and recycled / re-used where possible.
- Where waste management procedures do not exist, a procedure should be developed.
- Employees and contractors will be shown the importance of correct waste disposal as well as waste minimization and recycling.

8.2.2.4. Land and soil disturbance

Lithium mining process involve cutting out prismatic blocks from in situ outcrops and therefore disturbing the landform and the soil cover in the immediate surroundings of the mining site. This undertaking has the potential of disturbing the structural composition and biological productivity of topsoil and If not taken care of this can lead to land degradation.

Mitigation Measures to be enforced:

- The access road to the mining site must be established in consultation with the landowner and usage of existing roads shall be enforced.
- The design, construction, and location of access to main roads will be in accordance with the requirements laid down by the controlling authority.
- Land markings, vehicle tracks, trenches and excavations shall be restored to the original landform and, visual state as much as possible.

- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the mining licence (ML).

8.2.2.5. Biodiversity (fauna and flora)

Mining can be destructive process, changing abiotic and biotic conditions and in some cases singlehandedly causing local decline in rare and threatened species and ecosystems. Some of the activities of the proposed project i.e. vehicles, human movements, excavating pose a risk to the integrity of baseline biodiversity as well as the biological productivity of the site and the immediate proximity. Movement of vehicles in and out of the site and noise produced by moving earth-moving equipment are the major threats to fauna .The following mitigations are to be undertaken to minimize further impact on the existing biodiversity:

Mitigation Measures to be enforced: **flora**

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- Remove unique fauna and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.
- Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species and have important ecological functions in terms of carbon sequestration from decomposing materials at the site.
- Disturbance of marginal vegetation in the mountains should be limited.
- Where it is clear that certain large species will be destroyed consideration should be given to offering to rescue the individuals involved and relocate them to nearby gardens.
- Transplant removed trees where possible, or plant new trees in lieu of those that have been removed.
- Prevent the destruction of protected tree species.
- No open fires will be permitted on site.

Mitigation Measures to be enforced: **fauna**

- Barriers/barricades confining driving trucks must be erected to avoid stray driving and trampling on habitat. Proper demarcation of the mining and exploration area.
- Honor agreements set out in the site-access contracts, specifically relating to the areas utilized for professional hunting.
- Avoid disturbance on invertebrate on-site and along the gravel road stretch.
- Avoid the creation of multiples roads strips, which could result in the disturbance of breeding sites for various mammals.
- No workers will be allowed to collect any plant or snare, hunt or otherwise capture any wild animal.
- No domestic animals will be permitted on the quarry sites by means of erecting a perimeter fence, small stock should graze at designated areas.
- A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise.
- No foodstuff will be left lying around as these will attract animals which might result in human-animal conflict.
- Care will be taken to ensure that no litter is lying around as these may end up being ingested by wild animals

Methods for monitoring:

- Regular monitoring of any unusual signs of animal habitat.
- There should be limited movement of heavy duty machinery and mining equipment in the area to avoid interference.
- Birds or Nest sites will not be disturbed by any employee, visitor or contractor.
- If possible encountered bird kills and nest removal should be registered in a biodiversity data-base and information should be made available to the general public

8.2.2.6. Impacts of Alien invasive Plants

Alien invasive plants are prevalent in areas affected by land transformation and anthropogenic disturbance. It is a well-known fact that disturbance to the natural environment often encourages the establishment of alien invasive weed species. Surface mines are a major disturbance, and thus may promote the establishment and expansion of invasive plant communities. Seed or plant material may be imported to site from building materials if the source is contaminated. It is also possible that, plant or seed material may adhere to car tyres or animals, in some cases seeds of alien invasive plants may blow from debris removed at sites.

Mitigation Measures to be enforced:

- The site manager will ensure that debris is properly disposed of.

- Vehicle tyres inspections can be carried out although this may not be a practical mitigation measure.

- The proponent should implement an alien plants awareness campaign to educate and sensitize the employees and the local community on the menace of planting alien vegetation in the area.
- Eradicating alien plants by using an Area Management Plan

Methods for monitoring:

- Regular monitoring of any unusual signs of alien species.
- The proponent and local community should establish an alien plant task force to ensure that there is no planting of alien plants species in the area.
- The proponent should adopt and support the implementation of an annual alien plants clearing campaign.

8.2.2.7. Air quality

The proposed mining activities are the potential of fugitive sources for the dust particles as they are easily dispersed and carried away by the winds. During the operation phase dust will be generated onsite by earth moving equipment and also on the gravel road by trucks and vehicles.

Continuous movements of people, vehicles and earth moving vehicles on site can thus loosen and re-suspend the deposited material again into the air

Mitigation Measures to be enforced

- Converting high-use vehicles to cleaner fuels, where feasible
- Installing and maintaining emissions control devices, such as catalytic converters
- Implementing a regular vehicle maintenance and repair program
- Dust suppressants shall be applied to all the mining activities as well as all the unpaved/gravel roads.
- The speed of haul trucks and other vehicles must be strictly controlled to excessive dust or excessive deterioration of the road being used.
- All gravel roads in the project area should have a speed limit of 60km/h for light vehicles and 30km/h for heavy vehicles in order to minimize the amount of dust generated by vehicles.
- Regardless of the size or type of vehicle, fleet owners /operators should implement the manufacturer recommended engine maintenance programs.
- Converting high-use vehicles to cleaner fuels, where feasible.
- Implementing a regular vehicle maintenance and repair program.
- Installing and maintaining emissions control devices, such as catalytic converters.
- Transportation of raw materials required for construction will be carried out during non-peak hours.
- Covering scaffolding and cleaning of vehicles that can reduce dust and vapor emissions will be used.
- Cover any stockpiles with plastic to minimize windblown dust.
- During high wind conditions the proponent must make the decision to cease works until the wind has calmed down.
- Use of personal protective equipment for proper dust control for respiratory protection and other necessary PPE (gloves, work suits, sun hats etc.).

Monitoring

Emissions and air quality monitoring programs provide information that can be used to assess the effectiveness of emissions management strategies. The air quality monitoring program should consider the following elements:

- ✓ Monitoring parameters: The monitoring parameters selected should reflect the pollutants of concern associated with project processes.
- ✓ Baseline calculations: Before a project is developed, baseline air quality monitoring at and in the vicinity of the site should be undertaken to assess background levels of key pollutants, in order to differentiate between existing ambient conditions and project-related impacts.
- ✓ Monitoring type and frequency: Data on emissions and ambient air quality generated through the monitoring program should be representative of the emissions discharged by the project over time.
- ✓ Monitoring locations: location of ambient air quality monitoring stations should be established based on baseline study results.

Monitoring frequency

- Daily inspection by the ENC of the gravel roads and quarry site on possible dust creation that requires attention.
- Daily inspection on site by the ENC to ensure that all workers are wearing their protective clothes at all time during the mining process and the dry skin contact with gloves is prevented.
- Annual Stack Emission Testing for NO_x and SO_2.
- Dust fallout buckets and particle matter monitoring will be done to monitor the extent of the dust distribution in the area.

8.2.2.8. Impacts on Archaeological Sites

Potential damage to archaeological sites may be impacted through unintentional destruction or damages are a result of vehicle tracks, footprints and actions of contractors, employees and visitors of the quarry site. Currently, there is no information provided about known heritage or site of

cultural values within the project site. Therefore, this impact can be rated medium to low, if there are no mitigation measures in place. At the sites, there are no known heritage areas or artifacts deemed to be impacted by the ongoing exploration and quarrying activities. However, there might be unknown archaeological remains within the Mining Licence area hence the Proponent is required to follow the chance find procedures and consult the Heritage Council immediately. The Proponent should consider having a qualified and experience archaeologist on standby during entire operational phase. This action will be to assist on the possibility of uncovering sub-surface graves or other cultural/heritage objects and advice the Proponent accordingly. Identified graves or any archaeological significant objects on the site should not be disturbed, but are to be reported to the project Environmental officer or National Heritage Council offices.

Mitigation Measures to be enforced

- Buffer zones will be created around the operation site
- Adhere to practical guidelines provided by an archeologist on site to reduce archaeological impacts of quarrying activities.
- All archeological sites to be identified and protected before construction commences.
- Notices/ information boards information will be placed on site.
- Training employees regarding the protection of these sites.
- Obtain appropriate clearance or approval from the competent authority.
- In the event of such finds, mining must stop and the project management or contractors should notify the National Heritage Council of Namibia immediately.

Monitoring

- An archaeologist will inspect any identified archaeological sites before commencing within the mining activities.

8.2.2.9. Noise

Noise emissions on site are mainly generated by earthmoving equipments, drilling rigs, , people

and vehicles. The main noise sources are associated with drilling, blasting, loading and transport of equipment or materials to or from the pits and the site. Exposure to loud noises at work can cause irreversible hearing damage, workplace accidents and be a contributing factor to other health problems.

Mitigation Measures to be enforced

Continuous monitoring of noise levels should be conducted to make sure the noise levels at the mining site does not exceed acceptable limits.

- Reduction of noise from drilling rigs by using down hole drilling or hydraulic drilling;
- Installation of proper sound barriers and (or) noise containments, with enclosures and curtains at or near the source equipment.
- Use of rubber-lined or soundproof surfaces on processing equipment (e.g. screens, chutes, transfer points, and buckets);
- Use of rubber-belt transport and conveyors;
- Installation of natural barriers at facility boundaries (e.g. Vegetation curtains or soil berms).
- Notices should be given to the people on site and neighbors on scheduled blasting activities and other noise generating activities.
- Optimization of internal-traffic routing, particularly to minimize vehicle-reversing needs (reducing noise from reversing alarms) and to maximize distances to the closest sensitive receptors.
- No activity having a potential noise impact should be allowed after 18:00 hours if possible.
- In the event that activities continue outside the stipulated hours the contractor will communicate such occurrences to potentially affected communities prior to commencing such activities.
- Workers working near high noise mining machinery will be provided with wear protective equipment such as ear muffs and earplugs.
- Safe minimum distance from noise generating activities should be introduced.

- Re-locating noise sources to less sensitive areas to take advantage of distance and shielding.
- Taking advantage of the natural topography as a noise buffer during facility design.
- Reducing project traffic routing through community areas wherever possible.

Monitoring

Noise monitoring may be carried out for the purposes of establishing the existing ambient noise levels in the area of the proposed or existing facility, or for verifying operational phase noise levels. Noise monitoring programs should be designed and conducted by trained specialists. The type of acoustic indices recorded depends on the type of noise being monitored, as established by a noise expert. Monitors should be located approximately 1.5 m above the ground and no closer than 3m.

8.2.2.10 erosion Control

Mitigation Measures to be enforced

- Preventative measures such as earth embankments will be put up to prevent erosion will be established where appropriate.
- Pit slopes should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scour. A professional mining engineer should be employed to ensure that the slopes created are not endangering the lives and wellbeing of the employees that work directly in the pit.
- If necessary, diversion channels should be constructed ahead of the open cuts as well as above emplacement areas and stockpiles to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream of the mine.
- All mined areas (where works will take place) will be rehabilitated to control erosion and sedimentation.
- Existing vegetation must be retained as far as possible to minimize erosion.
- Rehabilitation of pits and waste dumps shall be planned and completed on a continuous basis in such a way that the run-off water (if any) will not cause erosion.

- Visual inspections shall be done on a regular basis with regard to the stability of water control structures, erosion and siltation (if required).
- Regular preventative maintenance should be carried out on site to ensure that the infrastructure is well maintained.

8.2.2.11 Topsoil disturbance

Topsoil shall be removed from all areas where physical disturbance of the surface will occur, prior to the disturbance occurring. Topsoil refers to that layer of soil covering the earth and which provides a suitable environment for the germination of seeds, allows the penetration of water, and is a source of micro-organisms, plant nutrients and in some cases seed.

Mitigation Measures to be enforced

- Topsoil shall be stored so that it can be placed on the exposed subsoil as soon as the mining of the excavation or the relevant section of it has been completed and its slopes have been finished off to the acceptable gradient as part of the rehabilitation process.
- Topsoil shall be stockpiled only in the areas dedicated for only that purpose, even if the topsoil is only partially cleared.
- The topsoil removed, shall be stored in a bund wall on the high ground side of the quarry and in such a way that it will not cause damming up of water or wash ways, or wash / blow away itself. Stockpiles will not exceed a height of **two** meters.
- Stockpiles shall be managed so as to maintain the re-growth potential of the topsoil. Should the stockpiles stand for too long (greater than 12 months) it can be considered barren from a seed bank point of view. In this case reseeding may be required. Stockpiles should ideally be stored for no longer than six months.
- The overburden, i.e., that layer of soil immediately beneath the topsoil, will be removed and stored separately from the topsoil.
- No chemical pollution shall be allowed to contaminate the soils; any plant equipment found to be attributing to this shall be removed from the site and repaired.

8.2.2.12 Negative impacts on landscape

Mitigation Measures to be enforced

- Negative effects on the landscape can further be prevented through mitigations (i.e. keep existing trees, introduce tall indigenous trees).
- Mining pits should be levelled mining activities cease so as to restore the visual sense of place of the area to its natural state.
- The remains of all structures that may have been erected at the mine site shall be demolished and removed on completion of the project.
- Care must be taken to ensure that all rehabilitated areas are similar to the immediate environment in terms of visual character, vegetation cover and topography and any negative visual impacts will be rectified to the satisfaction of the environmental consultant.

Land contamination

Land is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels from anthropogenic activities.

Mitigation measures

- Limiting or preventing access to contaminant by receptors (actions targeted at the receptor may include signage with instructions, fencing, or site security)
- Educating receptors (people) to modify behavior in order to reduce exposure (e.g., improved work practices, and use of protective clothing and equipment)
- Providing an alternative water supply to replace, for example, a contaminated groundwater supply well
- Capping contaminated soil with at least 1m of clean soil to prevent human contact, as well as plant root or small mammal penetration into contaminated soils
- Paving over contaminated soil as an interim measure to negate the pathway of direct contact or dust generation and inhalation
- Using an interception trench and pump, and treat technologies to prevent contaminated groundwater from discharging into Omaruru river catchment system

8.2.2.13 Fire and Explosion Hazard

In cases where a fire or an explosion takes place on the mining site, the following mitigation measures should be taken to ensure safety of the people and reduce damage caused by the fire or explosion.

Mitigation Measures to be enforced

- A designated area needs to be identified as an assembly area where personnel meet in case of such incident. All employees, contractors and visitors should be made aware of this area through inductions conducted before entering the site.
- All personnel on duty should be accounted for to make sure that there is no one in direct danger of the incident.
- A fire and explosive management policy and procedures document for the site should be drafted and review on a regular basis and every employee should know the content of this document so that they can act accordingly when a fire or an explosion breaks out.
- Refresher courses on the content of the fire and management policy and procedure document should be given on a regular basis to ensure that the employees aware and are competent in reacting to such incidents.
- Sufficient fire extinguishers will be installed at selected locations such as mine office, garage. Sufficient water hydrants with sufficient water hydrants with sufficient length of hosepipes will be made available on the surface for fire protection.
- Sufficient training should be given to the mine personnel regarding the use of fire extinguishers and identifying the sources of the fires.

8.2.2.14 Health, safety and security

There are number of hazards associated with the movement of equipments and impact on dangerous parts of the equipment. The risk of an accident will be high if the dangerous parts are exposed and operators are poorly trained or supervised. This increases the possibility of injuries and the responsible manager must ensure that all staff members are briefed about the potential risks of injuries on site.

Mitigation Measures to be enforced:
Safety on site

- All vehicular equipment operators must have valid licence for that particular vehicle class.
- The proponent should also test the competence of the individual drivers before they start operating.
- The mine site should be segregated into sections where only authorized personnel with a permit/pass can have access.
- Adequate lighting should be used during the night shift to provide lighting for the working personnel but not too bight to disturb the neighbors and the natural habitats of the area.
- Ensure that all mining personnel are properly trained for the work that they are responsible for on the mine site.
- The proponent should ensure regular refresher trainings are given to the employees.
- Provide for a first aid kit and a properly trained person to apply first aid when necessary.
- Restrict unauthorized access to the mining claim site and implement access control measures.
- Clearly demarcate the mining claim site boundaries along with signage of "no unauthorized access".
- Clearly demarcate dangerous areas and no go areas on site.
- Staff and visitors to the mining claim site must be fully aware of all health and safety measures and emergency procedures.
- The contractor must comply with all applicable occupational health and safety requirements.
- The workforce should be provided with all necessary Personal Protective Equipment where appropriate.
- Emergency medical treatment should be available on site.

General Health and Wellness of the Employees;

- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases.

- Encourage HIV counseling and testing and facilitate access to Antiretroviral (ARV) medication.

Hazardous Materials Management

Occupational Health and Safety Management Plan should address applicable, essential elements of occupational health and safety managements applicable in the work place:

- Job safety analysis to identify specific potential occupational hazards and industrial hygiene surveys, as appropriate, to monitor and verify chemical exposure levels, and compare with applicable occupational exposure standards.
- Hazard communication and training programs to prepare workers to recognize and respond to workplace chemical hazards. Programs should include aspects of hazard identification, safe operating and materials handling procedures, safe work practices, basic emergency procedures, and special hazards unique to their jobs Training should incorporate information from Material Safety Data Sheets for hazardous materials being handled. MSDSs should be readily accessible to employees in their local language.
- Provision of suitable personal protection equipment (PPE) (footwear, masks, protective clothing and goggles in appropriate areas), emergency eyewash and shower stations, ventilation systems, and sanitary facilities.
- Monitoring and record-keeping activities, including audit procedures designed to verify and record the effectiveness of prevention and control of exposure to occupational hazards, and maintaining accident and incident investigation reports on file for a period of at least five years.

8.2.3. Negative Impacts on Socio-Economic

The **nature of impact** is outlined below:

- Impact from loss of grazing for domestic livestock in “exclusive use zone”

- Impacts on cultural and spiritual values.
- Demographic factors: Attraction of additional population that cannot benefit from the project.
- Perception of Health and Safety risks associated with lithium mining.
- Excessive noise at unusual times.

Mitigation Measures to be enforced:

- The population change can be mitigated by employing people from the local community and encouraging the contractors to employ local individuals.
- The perception of risks will be mitigated by putting up safety signs wherever possible and ensuring that all employees and visitors to the site undergo a safety induction course.

Methods for monitoring:

- Public meetings will be held by the proponent whenever necessary.
- Regular meeting with the Interested and affected parties, where they can air their concerns should be done four times in a year.
- The outcome of these meeting should be recorded in a form of a report and the proponent needs to address the issues raised in this meeting.

Environmental Management Plan, Organization and Implementation

The environmental aspects which may be affected by the proposed project have been categorized into negative and positive impacts as an extension of the preceding sections. This section summarizes the objectives, indicators to be observed, schedules be adhered to and roles and responsibilities of various stakeholders to the EMP.

Table 1: Roles and responsibilities of various stakeholders to the EMP

Role	Responsibilities and duties
Proponent	– Responsible for the management and implementation of the EMP – Ensure environmental policies are communicated to all personnel throughout the proposed project and that employees understand the guidelines of the EMP – Responsible for providing the resources required to complete the project tasks – Appoint a safety health and environment manager and supporting officers, and – Ensure all workers are inducted on safety measures.
Safety Health nad Environment management	– Oversee safety health and environment related activities – Monitor daily operations and ensure adherence by personnel to the EMP – Maintain the community issues and concerns register and keep records of complaints, and – Maintain an up-to-date register of employees who have completed site induction. – Receive, recording and responding to complaints – Ensure adequate resources are available for the implementation of the EMP – Ensure safe and environmentally sound operations, and – Responsible for the management, maintenance, and revisions of this EMP
Foreman on duty	– Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this EMP, relevant to their roles and always adhere to this EMP – Report any non-compliance or accidents to the Safety Health and Environment Manager.
Employees	– Adhere to measures set out in the EMP – Ensure they have undertaken a site induction, and – Report any operations or conditions which deviate from the EMP as well as any non-compliant issues or accidents to the environmental manager

The table above is summarized below, with the following parties to aid in overseeing that the overall objective of this document is met;

- Management Committee
- Safety Health and Environment Manager
- Safety and Health Officer
- Environmental Officer
- Foreman on duty
- Personnel on duty/ employees

The following table emphasizes the role of each officer in the different management plans discussed in the previous section.

Table 2: Implementation of the objectives should be adhered to as indicated in the table.

Objectives	**Indicators**	**Responsibility**
To avoid any form of hydrocarbon spills on and around the mining site	No hydrocarbon spillage or/and remnants of hydrocarbon spillage shall be visible around the project site	Personnel on duty, Foreman on duty
To avoid any form of liter be it paper, metal, plastic and human waste on and around the mining site	No litter or/and remnants of liter shall be visible around the project site	All employees, Environmental Officer, safety, Health and Environment Manager.
To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	Personnel on duty, Foreman on duty and Environmental Officer.
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance	Safety, Health and Environment Manager, Environmental Officer and personnel on duty
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals	Foreman on duty, Environmental Officer and Safety Health and Environment Manager.
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	Environmental Manager, Safety Health and Environment Manager.

The following tables gives the mitigation measures to be undertaken during construction, operation, closure and decommissioning phases with the proponent responsible for implementation.

Table 3: Summary of Environmental Management Plan during construction, operation and decommissioning phases

Construction phase			
Environmental impacts	**Proposed mitigation measures**	**Responsibility**	**Monitoring plan**
Air pollution	• Regular maintenance of vehicles and equipments. • Brief workers and contractors. • Control speed and operation of construction vehicles. • Regular maintenance of vehicles, construction equipments and heavy machineries. • Provide workers with dust masks.	Personnel on duty, Foreman on duty and Environmental Officer	• Amount of dust produced. • Level of landscaping executed.
Noise pollution	• All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipments and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment.	Foreman on duty, Environmental Officer, Safety Health and Environment Manager.	• Amount of noise produced
Solid waste	• Littering should be discouraged by having strategically placed bins and refuse skips on site. • Recycling plastic, paper and cans should be encouraged on site • The bins should be emptied on a regular basis by the proponent or an independent contractor. • The site should have containers with bulk storage facilities at convenient points to prevent littering.	Personnel on duty, Environmental Officer and Safety Health and Environment Manager	• Presence of dust bins/waste collection points.

Oil leaks and spills	• Contactor should have a sealed designated area where maintenance is carried out to prevent percolation of contaminants. • Oil products should be handled carefully on bounded surfaces; in case it leaks. • Vehicles and equipment should be well maintained to prevent oil leaks.	Personnel on duty, Foreman on duty Environmental Officer and Safety Health and Environment Manager	• Absence of oil spills and leaks on site.
First aid	• A well-stocked first aid kit shall be maintained by a qualified personnel.	Safety Health and Environment Manager, Safety and Health Officer.	• Contents of the first aid kits.
Visual	• Environmental considerations will always be adhered to before clearing roads, trenching and excavation.	Safety Health and Environment Manager, Environmental Officer	• Employees to be trained on how to minimize impacts that can easily be identified with the eye.
Archaeological sites	• Buffer zones will be created around the sites. • Adhere to practical guidelines provided by the responsible archaeologist to reduce archaeological impacts of quarrying activities. • All archaeological sites to be identified and protected before development commences.	All personnel on duty, Environmental officer, Safety Health and Environment Manager	• Register of all archaeological sites identified.
Occupational health and safety	• Provide personal protective equipments, train workers on personal safety, and how to handle equipments and machines. • A well-stocked first shall be maintained by qualified personnel. • Report any accidents/ incidences and treat and compensate affected workers. • Provide sufficient and suitable sanitary conveniences	Safety and Health Officer, Safety Health and Environment Manager	• Workers using personal protective equipments. • Availability of a well-stocked first aid box. • Clean sanitary

	which should be kept clean.		facilities.
Fauna	• Some habitat areas such as the river and tunnel outcrops will be avoided wherever possible. • A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise. • No animals shall be killed, capture or harmed in any way. • No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict.	Personnel on duty, Environmental Officer, Safety Health and Environment Manager	• Regular monitoring of any unusual signs of animal habitat.
Alien invasive plants	• Ensure vehicles and equipment are clean of invasive plants and seeds. • Eradicating alien plants using area management plan. • Contain neighboring infestations and restrict movement of invasive plants from adjacent lands • Educating everyone on site on types of invasive plants.	Environmental Officer, Environmental Manager	• Regular monitoring of any signs of alien plants.
Loss of vegetation	• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. • The movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive area will be avoided. • The movement of vehicles will be restricted to certain tracks only.	Environmental Officer, Safety Health and Environment Manager	• Warning signs on site • Restored vegetation

Operational Phase			
Environmental /Social Impact	**Proposed mitigation measures**	**Responsibility**	**Monitoring plan**
Noise pollution	• All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipment and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment.	All employees, Safety Health and Environment Manager Environmental Officer	• Amount of noise produced
Visual	• Environmental considerations will be adhered to at all times before clearing roads and excavations	Safety Health and Environment Manager Environmental officer	• Employees to be trained on how to minimize visual impacts
Fauna	• Some habitat areas will be avoided where possible. • A fauna survey will be conducted to determine the effects of fragmented habitat game species should the need arise. • No animal shall be kept, captured, killed or harmed in any way. • No food stuff will be left lying around as these will attract animals which may result in human-animal conflict.	All employees, Environmental officer Safety Health and Environment Manager	• Regular monitoring of unusual signs of animal habitat.
Alien invasive plants	• Ensure debris is properly disposed of. • Ensure vehicles and equipment are clean of invasive plants and seeds. • Contain neighboring infestations and restrict movement of invasive plants from adjacent lands • Educating everyone on site on types of invasive plants. Eradicating alien invasive plants by using an area management plan.	Safety Health and Environment Manager Environmental officer Foreman and personnel on duty	• Regular monitoring of any signs of alien invasive plants

Loss of vegetation	• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavations. • Paths and roads will be aligned to avoid root zones. • Permeable materials will be used where ever possible. • Movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive areas will be avoided and restricted to certain tracks only.	Safety Health and Environment Manager	• Restored vegetation
Solid waste	• Minimize solid waste generated on site. • Encourage segregation of waste on site • Debris should be collected by waste collection contractor. • Excavated waste should be piled at a designated approved location.	Safety Health and Environment Manager Environmental Officer All foremen, personnel on duty	• Amount of waste on site. • Availability of dust bins, waste collection point.

Oil leaks and spills	• Machinery should be well maintained to prevent oil leaks. • Contractors should have a designated area where maintenance is carried out and should be underlain by impermeable layer. • Workshops should be bounded by concrete	Environmental Officer, Safety Health and Environment Manager, Foremen, personnel duty	• No observed/detected oil spills and leaks on site

Archaeological sites	• Buffer zones will be created around the sites. • Adhere to practical guidelines provided by an archaeologist to reduce archaeological impact of quarrying activities. • All archaeological sites to be identified and protected before further quarrying commences.	Environmental and safety manager	• Up to date register of all archaeological sites identified in the vicinity.
First aid	• A well-stocked first aid kit shall be maintained by qualified personnel.	Safety and health Officer, Safety Health and Environment Manager	• Contents of the first aid kit.
Fire preparedness	• Fire incidence firefighting emergency response plan. • Ensure all firefighting equipments are always available regularly maintained, serviced and inspected. • Fire hazard signs and directions to emergency exit, route to follow and assembly point in case of any.	Health safety officer Safety Health and Environment Manager	• Fire signs put up in strategic places. • Availability of well-maintained firefighting equipments.
Environmental health and safety	• Train workers on personal safety and disaster preparedness. • Provide sufficient and suitable sanitary conveniences which should be kept clean. • Conduct annual health and safety audits. • Report any accidents/incidences, treat and compensate affected workers. • A well-stocked first aid kit shall be maintained by qualified personnel.	Safety Health and Environment Manager	• Provide sanitary facilities. • Copies of annual audit.

Decommissioning phase			
Impacts	**Proposed mitigation measures**	**Responsibility**	**Monitoring plan/Indicator**
Noise and air pollution	• Personal hearing protection must be worn by workers in noisy section. • Regular maintenance of vehicles, equipments, heavy machinery on regular basis. • Workers should be provided with dust mask to wear at all times. • Decommissioning work can only be carried out during the day.	Health safety and Environment Manager Environmental Officer	• Amount of noise and dust generated
Disturbed physical environment	• Undertake a complete a complete environmental restoration programme and introducing appropriate vegetation for ground stabilization.	Health safety and Environment Manager Environmental Officer	
Solid waste	• Solid waste should be collected by contracted waste collection company. • Excavation waste should be used or backfilled • Open pit must be fenced of o avoid animals and unauthorized people from entering. • Waste dumps must be sloped and lined with top soil to allow re-germination of grasses	Health safety and Environment Manager Environmental Officer	• Amount of waste on site. • Presence of well-maintained receptacles and central collection point.
Occupational health and safety	• Train workers on personal safety and how to handle equipments and machines. • Provide personal protective equipments (PEE). • A well-stocked first aid kits shall be maintained by qualified personnel. • Demarcate area under decommissioning.	Health and safety officer, Environmental Officer, Health safety and Environment manager	• Workers using protective equipments. • Availability of a first aid box.

Monitoring, reporting and corrective action

8.3.1 Monitoring of EMP

Monitoring of the EMP performance for the proposed project by the Contractor emphasizes early detection, reporting, and corrective action. It is divided into three parts, namely: Monitoring of project activities and actions to be undertaken by the Environmental Officer and the Safety Health Manager appointed by the proponent.

- All incidences and situations which have the potential of jeopardizing compliance of statutory provisions as well as provisions of this EMP should be reported to the environmental manager and ultimately the executive management committee.
- The Environmental officer and safety and health manager shall take corrective prompt measures, adequate and long-lasting in addressing non-compliance activities.

To ensure compliance of the implementation of the EMP, it is highly recommended that a safety health and environment manager is appointed by the proponent to ensure the implementation of the EMP.

8.3.2 Inspections and Audits

During the life of the mine, performance against the EMP commitments will need to be monitored and corrective action taken where necessary, in order to ensure compliance with the EMP and relevant environ-legal requirements.

8.3.2.1 Internal Inspections/Audits

The following internal compliance monitoring programme will be implemented:

1. Project kick-off and close-out audits will be conducted on all contractors. This applies to all phases, including drilling contract work during operations:

- Before a contractor begin any work, an audit will be conducted by the applicable phase site manager to ensure that the EMP commitments are included in Contractors' standard operating procedures (SOPs) and method statements.
- Following completion of a Contractors work, a final close-out audit of the contractor's performance against the EMP commitments will be conducted by the applicable phase site manager.

2. Monthly internal EMP performance audits will be conducted during the construction, operation and decommissioning phases.

3. Ad hoc internal inspections can be implemented by the applicable manager at his/her discretion, or in follow-up to recommendations from previous inspection/audit findings.

8.3.2.2 External Audits

- At the end of each project phase, and annually during the operational phase, an independently conducted audit of EMP performance will be conducted.
- Specialist monitoring/auditing may be required where specialist expertise are required or in order to respond to grievances or authorities directives.
- Officials from the DEA may at any time conduct a compliance and/or performance inspection of quarrying operations. The proponent will be provided with a written report of the findings of the inspection. These audits assist with the continual improvement of the quarrying project and the proponent will use such feedback to help improve its overall operations.

8.3.3 Documentation

Records of all inspections/audits and monitoring reports will be kept in line with legislation. Actions will be issued on inspection/audit findings. These will be tracked and closed out.

8.3.4 Reporting

Environmental compliance reports will be submitted to the Ministry of Environment, Forestry on a bi-annual basis.

8.3.5 Environmental management system framework

Environmental Management System (EMS) will be established and implemented by the proponent and their Contractors. This subchapter establishes the framework for the compilation of a project EMS. The safety, health and environment manager will maintain a paper based and/or electronic system of all environmental management documentation. These will be divided into policy and performance standards &Enviro legal documentation.

Enviro-Legal Documentation

A copy of the approved environmental assessment and EMP documentation will always be available by the proponent. Copies of the Environment Clearance Certificate and all other associated authorizations and permits will also be kept onsite with the safety, health and environment manager. In addition, a register of the legislation and regulations applicable to the project will be maintained and updated as necessary.

Impact aspect register

A register of all project aspects that could impact the environment, including an assessment of these impacts and relevant measures is to be maintained. This Draft EMP identifies the foreseeable project aspects and related potential impacts of the proposed project, and such forms the basis for the aspect Impact Register with the project activities. It should however be noted that during the life of the project additional project aspects and related impacts may arise which would need to be captured in the Aspect-Impact Register.

8.3.6 Procedures and Method Statements

In order to affect the commitments contained in this EMP, procedures and method statements will be drafted by the relevant proponent (safety health and environment manager) and Contractors. These include, but may not be limited:

- Standard operating procedures for environmental action plan and management programme execution.
- Incident and emergency response procedures.
- Auditing, monitoring and reporting procedures, and
- Method statements for EMP compliance for ad hoc activities not directly addressed in the EMP action plans.

All procedures are to be a version controlled and signed off by the safety health and environment manager. In addition, knowledge of procedures by relevant staff responsible for the execution thereof must be demonstrable and training records maintained.

Site Map

An up to date map of the he mining area indicating all project activities is to be maintained. In addition to the project layout, the following detail must be depicted:

- Materials handling and storage;
- Extent of pit as mining progresses
- Waste management areas (collection, storage, transfer, etc.);
- Sensitive areas;
- Incident and emergency equipment locations; and Location of responsible parties.

Environmental management schedule

A schedule of environmental management actions is to be maintained by the applicable phase site managers and/or relevant Contractors. A master schedule of all such activities is to be kept up to date by the manager. Scheduled environmental actions can include, but are not limited to:

- Environmental risk assessment;
- Environmental management meetings;
- Soil handling, management and rehabilitation;
- Waste collection;
- Incident and emergency response equipment evaluations and maintenance
- Environmental training;
- Stakeholder engagement;
- Environmental inspections and
- Auditing , monitoring and reporting

8.3.7 Change Management

The environmental management schedule must have a procedure in place for change management. In this regard, updating and revision of environmental documentation, of procedures and method statements, actions plants etc. will be conducted as necessary in order to account for the following scenarios:

- Changes to standard operating procedures (SOPs);
- Changes in scope;
- Ad hoc actions;
- Changes in project phase; and
- Changes in responsibilities or roles

All documentation will be version controlled and require sign off by the applicable phase site managers.

8.4 Environmental code of conduct

The Code of Conduct outlined in this section of the EMP applies to, subcontractors, visitors, permanent and temporal workers. Therefore, anybody within the boundaries of the mine site must adhere to the Environmental Code of Conduct as outlined in this section of the EMP.

The safety health and environment manager will implement on-site environmental guidelines and has the authority to issue warnings as well as discipline any person who transgresses environmental rules and procedures. Persistent transgression of environmental rules will result in a disciplinary hearing and thereafter continued noncompliance behavior will result in permanent removal from the construction sites.

8.5 Site closure and rehabilitation

Introduction

The closure period will commence once the last planned blocks of lithium ore has been extracted from the pit, at the end of the active mining period. The scope of the proponent site rehabilitation emphasizes the previously removed top soil and overburden rocks to be gently sloped and distributed evenly so that natural vegetation can regrow. It is also required that pits are properly fenced off to avoid unauthorized entry and incidental fall ins of animals. Mine rehabilitation is the process of repairing the damage done by mining activities. Rehabilitation has been planned with a main aim of returning disturbed environment close to its pre mining state. It is also planned to cater for the access road, vehicle tracks around the site, removal, and restoration of areas covered by stockpile and rock piles. The closure vision for the proposed project is to establish a safe, stable and non-polluting post-prospecting landscape that can facilitate integrated, self-sustaining and value generating opportunities, thereby leave a lasting positive legacy.

8.5.1 Site closure and rehabilitation

All waste (such as hazardous and domestic) waste will be transported offsite for disposal in licensed landfill close to the mining site. Disturbed or/and contaminated areas will be cleaned up, treated where necessary and restored to its pristine state.

- Where access roads have been developed in cases where there are no roads, these will be rehabilitated and closed as part of normal closure actions.

- Rehabilitated area will be re-vegetated with the objective of creating a sustainable ecosystem. Vegetation establishment will be in line with a project area's indigenous vegetation.
- The recovered topsoil and subsoil should be utilized to reconstruct the original soil profile.
- All rehabilitated areas shall be considered no go areas and the safety health and environment manager shall ensure that none of the staff members enters the area after rehabilitation.
- A site inspection will be held after completion of the mining process to determine the nature and scope of the rehabilitation work to be undertaken. The rehabilitation will be done to the satisfaction of both the proponent and METF.

8.5.3 Closure Assumptions

This closure plan has been developed based on limited available information including environmental data. Some of the information currently available may need to be supplemented during the operational period. Therefore, several assumptions were made about general conditions, and closure and rehabilitation of the facilities at the site to develop the proposed closure actions. As additional information is collected during operations, these assumptions will be reviewed and revised as appropriate.

The assumptions used to prepare this plan include the following:

- The closure period will commence once the last planned weight of minerals has been extracted from the site.
- The proposed mining sites will be adhered to minimize the potential impacts.
- Vegetation establishment will be in line with a project area's indigenous vegetation.
- Water management infrastructure developed for the operational phase will be retained for closure /end of the life of the project as necessary.
- There are limited opportunities for any infrastructure to be built on site and if any infrastructure is built, it will be of limited benefit to the community. Therefore, all buildings will be demolished.
- All hazardous and domestic waste will be transported offsite for disposal in licensed landfills.
- No roads are anticipated to be constructed to access the site; existing roads will be used as far as possible. Where access tracks have been developed in cases where there are no roads, these will be rehabilitated and closed as part of normal closure actions.

8.5.4 Closure and Rehabilitation Activities

The rehabilitation actions intended to be undertaken at the end of the life of the proposed mining activities are described below.

8.5.4.1 Infrastructure

All infrastructures will be decommissioned, and the footprints rehabilitated for the establishment of vegetation. Material inventories will be managed near the end of mining activities to minimize any surplus materials at closure. Where practicable, equipment and materials with value not needed for post-closure operations will be sold and or removed from the site. Equipment with scrap or salvage value will be removed from the site and sold to recyclers.

A soil contamination investigation will be conducted on completion of demolition activities. The purpose of this is to identify areas of possible contamination and design and implement appropriate remedial measures to ensure that the soil contaminants are removed. Closure actions will include:

- All power and water services to be disconnected and certified as safe prior to commencement of any decommissioning works;
- All remaining inert equipment and decommissioning waste will be disposed to the nearest licensed general waste disposal facility;
- Salvageable equipment will be removed and transported offsite prior and during decommissioning;
- All tanks, pipes and sumps containing hydrocarbons to be flushed or emptied prior to removal to ensure no hydrocarbon/chemical residue remains;

8.5.4.2 Roads

Existing roads will be used as far as possible. Closure actions concerning roads and parking areas will include:

- Removal of all signage, fencing, and shade structures, traffic barriers, etc.
- All ‘hard top’ surfaces to be ripped along with any concrete structures.
- All potentially contaminated soils are to be identified and demarcated for later remediation; and
- All haul routes that have been treated with saline dust suppression water need to be treated, with the upper surface ripped and removed to designate contaminant disposal areas.

8.6 Remediation of Contaminated Areas

All soil, contaminated with hydrocarbons, will be identified, excavated, if possible, to at least 200 mm below the contaminated zone and then treated.

- All tanks, pipes and sumps containing hydrocarbons will be flushed or emptied.
- Removed soils will be managed as determined by the nature and extent of the contamination.
- Liquid storage tanks will be emptied, the structure removed/demolished and sub-surface holes filled; and
- All equipment in which chemicals have been stored or transported will be cleaned and disposed of in a suitable disposal facility.

8.6.1 Vegetation

Successful re-vegetation will help control erosion of soil resources, maintain soil productivity and reduce sediment loading in streams utilizing non-invasive plants that fit the criteria of the habitat (e.g. soils, water availability, slope and other appropriate environmental factors). Invasive species will be avoided, and the area will be managed to control the spread of these species. To counter the effects of erosion, naturally occurring grassland species will be planted on slopes. These species will provide soil holding capacity and reduce runoff velocity. The flatter areas will be re-vegetated with the objective of creating a sustainable ecosystem. The occurrence of protected plant species will need to be determined before vegetation is removed and the required permits will be obtained for either destruction or relocation.

8.6.2 Waste Management

Waste management activities will include:

- Hazardous waste will be managed handled, classified and disposed.
- Non hazardous substances will be disposed in the nearby landfill sites.
- Scrap and waste steel will be sold to recyclers
- It may be necessary to fence temporary salvage yards for security reasons, particularly where these are located close to public roads.

9. Public Participation Process

The public participation process commenced with a total of 5 newspaper advertisements in two widely distributed newspapers (Windhoek Observer and Confidente) for two consecutive weeks. Known interested and affected parties were notified directly via mail. Registered mail letters were also sent to the farm owners. Interested and affected parties that were notified directly include farmers, government departments, regional council, Namwater, Chamber of Mines and individuals that may be affected by the quarrying activities. No negative concerns were received so far, however should any interested and affected parties raise any concerns during the ongoing project phase, the Ministry of Environment, Forestry and Tourism will be immediately notified.

10. Conclusion and recommendations

The above Environmental Management Plan, if properly implemented, will help to minimize adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts. The Environmental Management Plan should be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to determine compliance with the EMP for the proposed site. Parties responsible for transgression of the EMP should be held responsible for any remediation that may need to be undertaken. The EMP Consultants are confident that the potential negative impacts associated with the proposed activities on site can continue to be mitigated by effectively implementing the recommended management action measures and their monitoring.

This report covers the environmental assessment for the construction, operation, operation, ongoing monitoring and rehabilitation and decommissioning, closure and aftercare of the lithium mine and supporting infrastructure. It should be viewed as a framework for integrating mitigation measures and applicable legal tools to ensure both compliance and sustainability. Potential impacts of the proposed mining activities and associated infrastructure and facilities were cumulatively assessed, where relevant, taking the existing environment and all other activities and facilities associated with the proposed mining into consideration. It was however taken into consideration that no mining/processing activities are currently being undertaken it is therefore very important that the proponent provides adequate support for human and financial resources, for the implementation of the proposed mitigations and effective environmental management during the exploration activities. The proponent must implement and adhere to all the provisions of the EMP report and environmental monitoring shall be implemented.

It is hereby recommended that proposed of the lithium mine and supporting infrastructure be granted an Environmental Clearance Certificate, provided that: All mitigations provided in this EMP should are implemented as stipulated and where required and emphasized, improvement should be effectively put in place. The proponent shall prepare address all the impacts identified as medium and high rated impacts. The Proponent and all their workers comply with the legal requirements governing this type of project and its associated activities. The proponent shall negotiate further Lease Agreements with the owners of any farms falling within the ML area.

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Appendix A: Registered IAP's

Name	Organization	Tel	Email
Christian Traupe	Amadeus Pty Ltd-Farm Goedehoop 117		imbusch@hotmail.co.uk
Alex Busch	Projects general mananger- Aqua services& Engineering	061-257 628	Alex Busch.alex @ase.com.na
C Orthman	MAWF- Deputy Director Water Environment	061-2087158	Cynthia.Ortmann@mawf.gov.na
C. Sisamu	Nampower	061-2052350	Calvin.Sisamu@nampower.com.na
C. Tubalike	MURD	061-2975062	ctubalike@murd.gov.na
Rachel Iilonga	Kohero 113 farm		rmiilonga@yahoo.com
E de Paauw	Roads Authority - Specialised road Legislation, Advise & Compliance	061-2847 027	dePaauwe@ra.org.na
E Muremi	Ministry of Health and Social Services Director Khomas Region	061-2035 001	Elizabeth.Muremi@mhss.gov.na
E. Shivolo	Min. of M&E - Mining Commissioner	061-2848111	Erasmus.Shivolo@mme.gov.na
Esmerialda Strauss	CHIEF FORESTER National Botanical Research Institute (NBRI)	061-2022017	Esmerialda.Strauss@mawf.gov.na
Christian Traupe	Traupe farming cc-Farm Okarund N 118, Okarundu NW 121, Kawab 117		imbusch@hotmail.co.uk
F. Sikabongo	MET - Deputy Director of Directorate of Environmental Affairs	061-2842701	frederick.Sikabongo@met.gov.na
Fransiska Nghitila	NWR-Environmental and Compliance Specialist	061-2857190	Fnghitila@nwr.com.na; fnghitila@gmail.com
Sonja Loots	Manager: Threatened Plants Programme,	Sonja Loots	Manager: Threatened Plants Programme,
Gert Fourie	Nampower - Engineering, Planning and Design	061-2054111	gert.fourie@nampower.com.na
M. Amakali	MAWF - Director Water Resource Management	061-208 7266	amakalim@mawf.gov.na; Maria.Amakali@mawf.gov.na