ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED MINERAL EXPLORATION ACTIVITIES ON 6710 IN BETHANIE CONSTITUENCY, ||KHARAS REGION-NAMIBIA



ENVIRONMENTAL MANAGEMENT PLAN FINAL

JUNE 2021



Prepared by: Junior Baiano Industrial

Consultants cc

Postal Address: PO Box 23537, Windhoek

Contact Person: Fredrich Nghiyolwa Contact number: +264 (61) 219 773

Cell: +264 (0) 81 1472029 Email: <u>fredrich@jbic.com.na</u> <u>Prepared for:</u> Luxury Investments Two

Hundred and Sixty-Four Pty Ltd

Postal Address: P.O Box 2184, Windhoek

Contact Person: Mr. Corné Coetser Contact number: +264 81 233 2410 **Table of Contents**

1. (HAPTER ONE: BACKGROUND	4
1.1.	Introduction	4
1.2.	PROJECT LOCATION	5
1.3.	PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)	7
1.4.	LEGAL AND OTHER REQUIREMENTS COMPLIANCE	7
1.5.	THE EMP ADMINISTRATION	7
2. (CHAPTER TWO: ENVIRONMENTAL AND SOCIAL MANAGEMENT	10
3. E	nvironmental Managment Programme	14
3.1.	Overview	14
3.2.	CONSTRUCTION MANAGEMENT PLAN	14
3.2.1.	MANAGEMENT OF EXPLORATION CAMPSITE	14
3.2.2.	MANAGEMENT OF FUELS AND OTHER HAZARDOUS MATERIALS	15
3.2.3.	MANAGEMENT OF THE EXPLORATION FOOTPRINT	16
3.2.4.	MANAGEMENT OF DUST AND NOISE NUISANCE DURING CONSTRUCTION AND OPERATION	16
3.2.5.	Waste Management	17
3.2.6.	COMPLAINTS REGISTER	18
3.2.7.	REHABILITATION PLAN	18
List of F	igures	
Figure	1: Proposed Project Site	6
	Tables : Listed Activities relevant to the project	4
Table 2	2: Roles and Responsibilities in EMP Implementation	9

Table 3: Exploration EMP.......10

Acronyms

TERMS	DEFINITION	
BID	Background Information Document	
EAP	Environmental Assessment Practitioners	
ECC	Environmental Clearance Certificate	
ECO	Environmental Control Officer	
EIA	Environmental Impact Assessment	
ESIA	Environmental and Social Impact Assessment	
EMP	Environmental Management Plan	
GHG	Greenhouse Gasses	
ISO	International Organization for Standardization	
I&Aps	Interested and Affected Parties	
JBIC	Junior Baiano Industrial Consultants	
MEFT: DEA	Ministry of Environment, Forestry and Tourism's	
	Directorate of Environmental Affairs	

1. CHAPTER ONE: BACKGROUND

1.1. Introduction

Luxury Investments Two Hundred and Sixty-Four Pty Ltd herein referred to as proponent intends to explore further the graphite deposit that was found by J. Eloff in early 1928. Currently, there is mineral exploration going on EPL 3895 as well as a mining License within the EPL area. The proponent, looks forward to fully establish mining activities in the project area and they intent to explore the surrounding areas for further mineral deposits of graphite.

In this respect, the proponent intends to conduct mineral exploration activities on EPL 6710, in Bethanie constituency, ||Kharas Region-Namibia. However, mineral exploration is a prescribed activity under the Environmental Management Act (2007) that requires an environmental impact assessment to be carried out before project implementation, as such this Environmental Impact Assessment (EIA) was conducted to authorize the listed activities triggered by the project in terms of the Environmental Management Act (EMA), 2007, the EIA Regulations – 2012, the EIA policy of 1995 and international environmental treaties and conventions binding Namibia.

According to the Environmental Management Act (2007) and its Regulations (2012) the existing development requires an Environmental Clearance Certificate as specified in the following sections of the Act shown in Table 1: Listed Activities relevant to the project on the next page:

Table 1: Listed Activities relevant to the project

ACTIVITY			RELEVANT SECTIONS
MINING	AND	QUARRYING	- 3.1 The construction of facilities for any process or activities
ACTIVITIES			which requires a licence, right or other form of authorisation,
			and the renewal of a licence, right or other form of
			authorisation, in terms of the Minerals (Prospecting and
			Mining Act), 1992.
		-3.2 Other forms of mining or extraction of any natural	
	reso		resources whether regulated by law or not.
			-3.3 Resource extraction, manipulation, conservation and
			related activities.

In respect of the commissioning of the mineral exploration activities, Junior Baiano Industrial Consultants cc has been consulted by the proponent to conduct an Environmental Impact Assessment to develop an Environmental Management Plan (EMP) for the undertaking of mineral exploration activities and to apply for an Environmental Clearance Certificate with the Directorate of Environmental Affairs under the Ministry of Environment, forestry and Tourism-Namibia.

1.2. PROJECT LOCATION

The mineral exploration activities are proposed on EPL 6710 covering Heigums, Akam 103 and Aukum Farms in Bethanie Constituency, ||Kharas Region. The map below (Fig 1) gives an Arial view of the project site and exact project locality map.

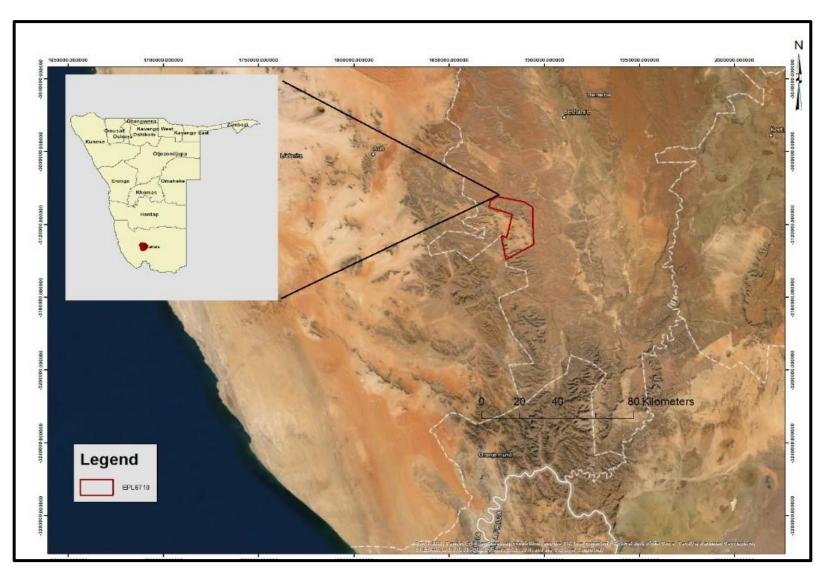


Figure 1: Proposed Project Site

1.3. PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been developed for the mineral exploration activities proposed to be conducted on EPL 6710. It forms the operational framework within which the proposed mineral exploration activities will be conducted. All anticipated environmental and social impacts identified in the environmental scoping report are addressed, with a mitigation action, monitoring requirements, key indicator and responsibilities.

This EMP is incessant, and it requires compliance monitoring, updating and or amendment if the scope of operations change. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

This section describes the Environmental Management Plan (EMP) for impacts associated with the proposed development. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed farm area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long-term environmental degradation.
- Ensure public safety and health is protected

1.4. LEGAL AND OTHER REQUIREMENTS COMPLIANCE

This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and the Environmental Assessment regulations of 2012. As such, key requirements in accordance to this Act, classifies the proposed project as listed and invokes the need for an environmental management plan to sustainably implement this project. However, legal compliance is not only limited to the EMA, but also applies to all applying legal requirements identified in the ESR. When licenses are required such as wastewater discharge, the proponent should ensure that all licenses and permits are obtained and fulfilled as per conditions.

1.5. THE EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (Environmental Control Officer) to ensure the successful implementation of the EMP.

It solely remains the responsibility of Luxury Investments Two Hundred and Sixty-Four Pty Ltd to ensure the following;

- That all members of the project team, including contractors, comply with the procedures set out in this EMP;
- That all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Table 2: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Luxury Investments Two Hundred	Responsible to enforce EMP implementation to contractors
and Sixty-Four Pty Ltd	
Environmental Control Officer	Implement, review and update the EMP.
	• Ensure all reporting and monitoring required under EMP is undertaken, documented and
	distributed as needed
	• Conduct environmental site training (tool box talks) and inductions with the support of an
	environmental consultant.
	Conducts environmental audit at work site with the support of environmental consultant.
	Close out all non-conformances.
	Ensure materials being used on site are environmentally friendly and safe.
The Department of Environmental	Approve the EMP and any amendments to the EMP.
Affairs	Approve reports of environmental issues and non-conformances as issued.
	Review and approve environmental reports submitted as part of EMP implementation
Exploration Manager	Control and monitor actions required by the EMP.
	Report all environmental issues to HSE Manager.
	Ensure documented procedures are followed and records kept on site.
	• Ensure any complaints are passed onto the management within 24 hours of receiving the
	complaint.
Employees	Follow requirements as directed by site engineers.
	• Report any potential environmental issues to site engineer/project manager, indicating spilt oil,
	excess waste, excessive dust generation, dirty water running off the site and other possible non-
	conformances

2. CHAPTER TWO: ENVIRONMENTAL AND SOCIAL MANAGEMENT

Table 3: Exploration EMP

Impact	Description	Mitigation/ Management Action	Monitoring Requirements	Responsibility
Camp Set up and Drilling Phase Impacts				
Noise pollution	Noise will be generated through: -Access roads upgrading -Exploration drilling activities -Exploration camp construction.	 A drilling interval will be established, used and adhered to. Workers will be issued ear plugs to protect them from excessive noise. Public will be notified through printed timetable stating planned operational activities. Construction activities will be conducted during daytime. Site notices will be erected on and around the site notifying visitors and nearby residents of different hazards on site. 	-Daily Observations -Monthly Monitoring	Exploration Manager
Dust Generation	Dust will accumulate because of the land preparation, onsite movements of vehicles and machines, wind blowing on loose material during construction and tipping.	 Dust suppression will be done through watering dust sources surfaces. -Watering down dusty surfaces, -Ensure that protective equipment such as respirators are distributed to employees, and ensure their use. -Site notices to be erected on and around the site to inform visitors and surrounding residents. -Fallout dust monitoring will be conducted 	-Daily Observations -Monthly Monitoring	Exploration Manager
Loss of Biodiversity	1. 0	- There is need to ensure that endemic species in the area are not affected, both fauna and flora, however no	-Daily Observations -Monthly Monitoring	Exploration Manager

Impact	Description	Mitigation/ Management Action	Monitoring	Responsibility
			Requirements	
	-Soil disturbance on and around the site.	 All the major trees will be preserved and the operational activities will fit into the environment without affecting the trees. -Upon completion of drilling activities more trees and lawn will be planted on and around the site to restore the site into a status that is environmentally friendly. -When necessary a permit must be obtained from the Directorate of Forestry before removing a major tree species. -The Mitigation Plan in the Fauna and Flora Specialist Study should be followed and implemented. 		
Greenhouse gas emissions	Green House Gasses (GHGs) emissions will be produced from the following activities: • Fuels combustion for transport (construction vehicles and equipment) • Ground excavation releases phosphorus found underground and releases particulate matter into the atmosphere.	-Adopt the use of ethanol blended fuels wherever necessaryDesign an operation system that cuts on fuel consumption Use of solar energy system during construction for lighting and other minor energy needs.	-Daily Observations	Exploration Manager

Impact	Description	Mitigation/ Management Action	Monitoring	Responsibility
			Requirements	
Pollution from drilling activities	Drilling is associated with a use of machinery and material supplements on site	 Ensure that all waste from drilling activities is stored and contained in designated containers and transported to the nearby waste disposal site. Adequate mobile toilets must be provided at the exploration camps for the use of the workers. Waste bins will be put on site and regularly emptied to handle domestic waste. 	-Daily Observations -Borehole and Surface water monthly monitoring (level and quality)	Exploration Manager
Hydrocarbons release into the environment	There will be no storage of oils and fuel on site, however there is risk of spillage of hydrocarbons from vehicles and machinery operations, maintenance through leakages and spillages which may result in environmental contamination	-Implement a maintenance programme to ensure all vehicles, machinery and equipment are remain in proper working order -Vehicle maintenance should be Conducted in designated areas only, preferably off-siteWaste oil, fuels and other chemicals from drip trays on stationery vehicles and machinery will be disposed of as hazardous waste at a licensed facility by a specialist hazardous waste handlerOil residue will be treated with oil absorbent material such as Drizit or bio-remediation and removed to an approved waste disposal site -No bins containing organic solvents such as paint and thinners shall be cleaned on site, unless containers for liquid waste disposal are provided on site.	-Daily Observations	Exploration Manager
Safety and Health risks	Mining related Safety and Health hazards	 Equip workers with Personal Protective Equipment (PPE), provide trainings on how to effectively use the PPE. -Provide platforms for briefings and meetings about possible safety and health hazards in the work place 	-Daily Observations	Exploration Manager

Impact	Description	Mitigation/ Management Action	Monitoring Requirements	Responsibility
		-Provide site signs warning and informing about different		
		hazards on site.		
Population Influx	The project will bring in	-Train and brief employees to respect local cultures and	-Daily	Exploration
	skilled and unskilled	leaders,	Observations	Manager
	workforce into Bethanie	-Engage on massive sexual health training and		
	area from other places	awareness and providing contraceptives such as		
	increasing population	condoms, as well as provide means counselling for those		
	density in the area.	that are affected by HIV/AIDS and other STDs,		
		- Provide environmental trainings and continue a regular		
		basis briefing the employees about nature conservation		
		(animal and plants), and discourage indiscriminate		
		vegetation clearance.		
Employment	The proposed project	- Work with local leadership (councillor) on acquiring non-	-Daily	Exploration
creation	provides an opportunity of	skilled labour from the residents.	Observations	Manager
	outsourcing work			
Business	-Raw materials acquiring	-The proponent will outsource most of its materials and	-Daily	Exploration
linkages	and contracting	services from the surrounding areas.	Observations	Manager
	companies provide an			
	opportunity for			
	businesses.			
Infrastructure	The development	-Development such as road upgrading will not only be	-Daily	Exploration
development	presents a unique	limited up until the project site, but it will be extended to	Observations	Manager
	opportunity for	service other residents as well.		
	infrastructure			
	development in Bethanie.			

3. Environmental Managment Programme

3.1. OVERVIEW

The following management plans need to be implemented during the exploration and rehabilitation phase of the proposed mineral exploration activities.

Exploration Management Plan;

Rehabilitation Plan; and

Many of the issues to be addressed in these plans are regulated in existing laws, regulations and guidelines. In addition, it is recognized that the content of several plans will be generic, in the sense that existing procedures are documented in standard code of practice, and that adaption of such generic plans will only be possible as a dynamic process during mineral exploration phase.

3.2. CONSTRUCTION MANAGEMENT PLAN

The environmental management programme to be implemented by the proponent shall include the following key measures:

3.2.1. Management of Exploration Campsite

 The exploration contractor shall comply with all relevant laws and regulations concerning water provision, sanitation, wastewater discharge and liquid and solid waste handling and disposal. The contractor is referred to the requirements of the EMA.

2. The campsite will be access controlled to prevent the access of livestock and local fauna.

- 3. The contractor shall not locate the campsite, or sanitation facilities, in any areas in which vegetation is pristine, nor within 100 m from any watercourse.
- 4. The contractor shall at all times carefully consider the machinery required for the desired task while minimizing the extent of environmental damage.
- 5. The contractor shall keep construction campsites clean and tidy at all times. The contractor shall not leave domestic waste uncontained, and temporary storage shall be enclosed to keep out people and animals. No permanent domestic waste disposal

- shall be permitted at the campsites. All domestic refuse is to be removed to an existing licensed landfill site.
- The contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures may include appropriate instruction of employees about the fire risks and the construction of firebreaks around the site perimeter.
- 7. All vehicles and plant will be allocated a dedicated parking area in the camp site. Plant still standing for long periods of time will be provided with a drip tray in order to contain any possible hydrocarbon spills. Drip trays will be provided with absorbent material on a permanent basis.
- 8. Adequate firefighting equipment shall be made available and maintained on site.
- Decommissioning of the campsite will involve removal of all compacted platforms and slab foundations or as agreed with the land owner.

3.2.2. Management of Fuels and other Hazardous Materials

- 10. The contractor shall comply with all applicable laws, regulations, permits and approval conditions and requirements relevant to the storage, use and proper disposal of hazardous materials.
- 11. The contractor shall manage all hazardous materials and wastes in a safe and responsible manner, and shall prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials.
- 12. Should soil be contaminated by hazardous substances, soil will be removed and disposed of at a registered hazardous waste disposal facility.
- 13. The contractor shall not construct fixed fuel storage or refuel any vehicle or equipment within 100 m from a watercourse or wetland, within a floodplain, or where there is the potential for spilled fuel to enter a watercourse or groundwater. Should it not be possible to establish such facilities outside the 100 m zone, the contractor shall ensure that the necessary precautions to prevent and clean up spillages.
- 14. The contractor shall enclose all fixed storage.
- 15. The contractor shall place on site tools and equipment, such as pumps, compressors, and generators on impermeable sheeting (i.e. polyethylene or other similar materials) to prevent hydraulic fluid or fuel leaks from contaminating soils or groundwater or entering any watercourse or wetland.

- 16. The contractor shall take all reasonable precautions to prevent fuel and lubricant spills during the course of construction. To this end, the contractor shall ensure that regular audits are performed to verify that no leakage or defective equipment is brought onto site.
- 17. The contractor shall ensure that there is sufficient spill containment and absorbent material available on site to manage accidental spills. The contractor shall immediately clean up accidental spillages of fuel and oils, or other hazardous substances.

3.2.3. MANAGEMENT OF THE EXPLORATION FOOTPRINT

- 18. The contractor shall prevent littering and the random discard of solid waste on the site.
- 19. The contractor shall manage hazardous waste.
- 20. The contractor shall ensure that all areas marked as sensitive areas with endemic species such as Lithops should be avoided and preserved at all times, in consultation with the ECO and the Lithops Foundation.
- 21. The contractor shall minimize the risk of fires.
- 22. The contractor shall prevent trespassing on the site.
- 23. The contractor shall prohibit, and actively monitor and prevent, poaching or harassment of wild animals by contract employees.
- 24. The contractor will ensure that travelling speeds do not exceed 10 km/h and shall ensure that this restriction is enforced. This may include, but not limited to, the monitoring of vehicle speeds and the erection of speed limit signs.

3.2.4. MANAGEMENT OF DUST AND NOISE NUISANCE DURING CONSTRUCTION AND OPERATION

- 25. The contractor shall control dust along the construction footprint so as to ensure that no detrimental effects to occupiers of the land or general public are caused. Control measures to be considered include the use of water browsers to wet down surfaces that have been denuded and which have the potential to generate dust.
- 26. Wetting of denuded areas, including the topsoil stockpile, will be done in such a manner than only enough water is utilized for dust suppression, and to ensure no unduly runoff is caused.
- 27. The contractor shall comply with legal requirements for the management of noise impacts.

- 28. The contractor's employees shall not make recreational use of all terrain vehicles or motorcycles on site.
- 29. An appropriate freeboard will be enforced for trucks hauling dirt, sand, soil and other lose materials. All material transported by trucks will be covered to prevent undue nuisance dust during transportation.
- 30. Fallout dust monitoring will be conducted on a 28/ day cycle during construction.
- 31. Groundwater level and quality monitoring will be conducted monthly.
- 32. Surface water quality monitoring will be conducted, if any is present.

3.2.5. WASTE MANAGEMENT

- 33. Temporary storage of construction waste will be limited to within the construction camp site, and areas designated.
- 34. The contractor shall be responsible for the collection and removal of waste from the construction site.
- 35. The contractor shall arrange for the removal of waste on a weekly basis to a registered landfill site. Records of this disposal shall be kept on site.
- 36. Hazardous waste will be separated from domestic waste and stored is demarcated bins.
- 37. Hazardous waste bins will be stored on a hard standing surface, covered and made water tight.
- 38. Safe disposal certificate will be obtained from the sub-contractor appointed for the removal of hazardous waste, and will be in adherence to the EMA Act and the Walvis Bay Municipality waste management guidelines and by-laws.
- 39. The contractor shall respect the property and rights of the landowners and occupiers at all times and shall treat all such persons with courtesy.
- 40. Access over land, the integrity of fences, the closure of gates, control of veld fires, littering, dust control, noise abatement, harassment of animals, sedimentation and contamination of surface and ground water, damage to landscape and vegetation, and all such environmental matters, shall be controlled as far as practical by the contractor in the best interests of Charcoal Warehouse cc.

3.2.6. COMPLAINTS REGISTER

- 41. The contractor and proponent shall establish and maintain a register for periodic review by the Project Management Team that logs all complaints raised by I&APs about the construction and operational activities.
- 42. The register shall be regularly updated and maintain records, including the name of the complainant, his/her domicile and contact details, the nature of the complaint and if any action was taken to rectify the problem.

3.2.7. REHABILITATION PLAN

- 43. The contractor shall restore the exploration footprint to the natural contours of the ground and shall allow normal surface drainage, as far as practical.
- 44. The contractor shall loosen compacted soils along the construction footprint by means of a plough or scarified. Scarifying areas where topsoil has been removed shall be carried out prior to the replacement of topsoil. Care shall be taken to avoid topsoil inversion if scarifying is carried out in areas where topsoil has not been removed. Any ripping or scarifying operations shall not exceed a depth of 100 mm.
- 45. The contractor shall prevent concentrated runoff along, or next to, the construction footprint, and shall do so by shaping the land, establishing vegetation, and taking other appropriate measures to absorb and disperse runoff.
- 46. In places where erosion control is required, including gullies, watercourses, large depressions, and steep slopes, the contractor shall construct diversion banks across the construction footprint to divert the flow of water away from the construction area and into the natural drainage courses.
- 47. Where the land is naturally armoured with surface rock or stone, the contractor shall, after construction, replace the armouring over the construction footprint to protect against erosion.

References

Enviro Dynamic.2014. Environmental Assessment Keetmanshoop Signal transmission, Namibia

FAO, 1998. World reference base for soil resources. World Soil Resources Report, vol. 84. FAO, Rome.

FAO, 1998. World reference base for soil resources. World Soil Resources Report, vol. 84. FAO, Rome.

Government of Namibia. 2008, Government Gazzette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

Government of Namibia.2008, Government Gazette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

Mendelsohn, J., el Obeid, S.2003. A digest of information on key aspects of Namibia's geography and sustainable development prospects. Research and Information Services of Namibia

MET (Ministry of Environment and Tourism). 2012. *Environmental Management Act no. 7 of 2007*. Windhoek: Directorate of Environmental Affairs, Ministry of Environment and Tourism