(43)

CNMC LUANSHYA COPPER MINES PLC. CLM 中色卢安夏铜业有限公司

RegistrationNo.52849 PO Box 90456 Luanshya, ZambiaTel:+260-212-513400 Fax:+260-212-512223

CLM/DCEO-014/2011

10 January, 2011

The Manager Northern Region
Environmental Council of Zambia
P O Box 71302
NDOLA

Dear Sir

RE: SUBMISSION OF FINAL ENVIRONMENTAL PROJECT BRIEF FOR THE SILICA QUARRY PROJECT AT MUVA HILL AND PAYMENT OF ANNUAL ENVIRONMENTAL LICENCES.

Reference is hereby made to the above captioned subject matter:

We have pleasure in submitting the Final Environmental Project Brief (EPB) for the Silica Quarry Plant at Muva Hill.

Please find here six (06) copies of the EPB for the Silica Quarry Plant at Muva Hill.

We also find pleasure in submitting cheque No.824702 in the sum of Seventy million five hundred and forty thousand kwacha only. This is for the payment of annual Environmental Licenses for our facilities.

Yours faithfully

Wang Jingjun
Deputy CEO-Production, Safety & Environment

cc CEO
Deputy CEO-Technical
Head-Safety & Environment
Senior Environmental Services Officer
File.

EXECUTIVE SUMMARY

CNMC Luanshya Copper Mines (CLM) Plc took over operations of Luanshya and Baluba Mines, Processing Plant and associated support service units in June 2009. CLM acquired 80% of shares that belonged to ENYA Holdings, a company owned in equal parts by IMR group and the BSGR group, with the Zambian Government retaining its 20%, through ZCCM Investment Holdings.

CLM is committed to operate historical, present and future projects in compliance with the Environmental Protection and Pollution Control Act (Environmental Impact Assessment) Regulations of 1997 and the Mines and Minerals (Environmental) Regulations of 1997.

The development and implementation of the Muliashi open pit project is key to growth and sustainability of copper mining in Luanshya town. Therefore the construction of the proposed Silica Quarry Facility at Muva Hill would help CNMC Luanshya Copper Mines to manage the Muliashi Project Plant at a reasonable economical cost. Silica, a rawmaterial in the construction and lining of Acid-Leach pads would be sourced just about three kilometers from the earmarked plant site. It should however be acknowledged that historical signs of quarry activities by the previous owners of Luanshya Copper Mines exist todate at Muva Hill site e.g. Good access roads are still intact.

The main environmental concerns under this proposed project being; management of noise within threshold levels, and the management of dust, and other friable materials during crushing and blasting. Mitigation measures to prevent and arrest adverse environmental impacts have been suggested in more practicable terms. The Quarry Plant is expected to operate for a period of **three (03) years**. The entire establishment and installation of the Silica Quarry Plant is expected to cost CLM an estimated **USD 210,000.00** with an expected total output of about **350,000m³** of silica.

SIGNATURES OF PROPONENT AND CONTRIBUTORS

The table below shows some of individuals who contributed in the preparation of this EPB.

Name	Qualification/Designation	Signature
Mr. Wang Jingjun	Bachelor of Engineering in Safety Engineering. Deputy CEO - Production, Safety & Environment. Member of the Board of Directors. CNMC Luanshya Copper Mines Plc	16/11-2010
Mr. Robert Kamanga	Bachelor of Mineral Sciences in Geology, Master of Mineral Sciences in Mining Engineering. Deputy CEO-Technical CNMC Luanshya Copper Mines Plc	16/11/10
Mr. Stanley Chama	Certificate in Safety, Health, Environment & Quality Management - IRCA Certificate in Project Planning & Management - UNZA Head of Safety & Environment CNMC Luanshya Copper Mines Plc	16/11/10
Mr. Charles Sikalonzo	Bachelor of Science in Forestry Sciences. Certificate in Handling of Radioactive Sources. Senior Environmental Services Officer. CNMC Luanshya Copper Mines Plc	16.11.2010

ENVIRONMENTAL COUNCIL OF ZAMBIA

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Tel/Fax:+260 211 515261

In replying please quote
ECZ/INS/101/4/1
No. .....

March 3, 2011

The Chief Executive Officer
CNMC Luanshya Copper Mines Plc
P.O. Box 90456
LUANSHYA

Dear Sir,

Re: Proposed Silica Quarry Plant at Muva Hill by CNMC Luanshya Copper Mines Plc

Reference is made to the above captioned project report submitted to the Environmental Council of Zambia (ECZ) on 11th January 2011 for consideration in accordance with the requirements of the Environmental Impact Assessment (EIA) Regulations, Statutory Instrument No. 28 of 1997.

The ECZ has since reviewed the Environmental Project Brief (EPB) and based on the information provided by yourselves and from written and verbal comments from interested and affected parties and our site verification inspection findings, the said EPB has been **approved.**

Find attached to this Decision Letter, conditions governing this approval.

Yours faithfully,

PMBanda

Paul M. Banda
Director
ENVIRONMENTAL COUNCIL OF ZAMBIA

Cc: The Town Clerk – Luanshya Municipal Council, **Luanshya**

ENVIRONMENTAL COUNCIL OF ZAMBIA (ECZ)

1.0 PROJECT BACKGROUND DECISION LETTER

1.1 PROJECT TITLE:

Proposed Silica Quarry Plant at Muva Hill by CNMC Luanshya Copper Mines Plc

1.2 PROJECT PROPONENTS:

The Chief Executive Officer
CNMC Luanshya Copper Mines Plc
P.O. Box 90456
LUANSHYA

Contact Person

Name:	Wang Jingjun
Designation:	Deputy CEO – Production, Safety & Environment
Tel No.:	+260 212 513400
Fax No.:	+260 212 512223
Email:	wangjingjun@lcm.co.zm

1.3 PROJECT LOCATION:

The proposed project site is located at Muva Hill in Luanshya. In relation to other existing CLM facilities around, Muva Hill lies about 1.1 km west of Baluba Mine Shaft and about 2 km north-west of Muliashi Open Pit Mine.

1.4 DATE OF SUBMISSION BY PROPONENT:

11th January 2011

1.5 DATE OF CONSIDERATION BY COUNCIL:

02nd March 2011

2.0 DETAILS OF THE PROJECT:

CNMC Luanshya Copper Mines Plc (CLM) proposes to mine silica from the western part of Muva Hill in Luanshya by conventional open pit mining. The Muva Hill is a huge outcrop of quartzite and covers an area of 46.4 ha.

The Muva Hill is under the CLM Large Scale Mining License No. 8394-HQ-LML.The quartzite contains silica grades of about 80% with minor iron and gangue minerals. Mining of silica will be done in batches; that is, silica will be mined as and when it is needed. Process water will be piped from Baluba Shaft and a power generator will be installed for operating the drillers and for general lighting of operational areas.

The proposed project will mine only 1.679Ha of the total 46.4Ha of Muva Hill. The silica will then be transported to a crusher to be located at Muliashi Open Pit Mine and it will be crushed to a predetermined size. The silica stones will be used at the Muliashi Open Pit Mine to line processing plants the acid Leach pads and the floors of the tank houses. Machinery that will be used for project operations will be serviced at Baluba Heavy Equipment Repair Workshop.

CLM targets to extract a total of 350,000m^3 of silica over a period of 3 years. After that the project will be decommissioned.

3.0 DECISION BY COUNCIL:

3.1 The project has being **approved** subject to the following conditions:

3.1.1 CNMC Luanshya Copper Mines Plc shall implement the project and all the environmental management commitments as proposed in the Environmental Project Brief (EPB) **with changes** as proposed by Environmental Council of Zambia (ECZ) in the Decision Letter and any other conditions that may be issued thereafter.

3.1.2 CNMC Luanshya Copper Mines Plc shall obtain clearance from the National Heritage and Conservation Commission and comply in full with the conditions of the commission.

3.1.3 CNMC Luanshya Copper Mines Plc shall employ dust suppression techniques in areas with loose soil.

3.1.4 CNMC Luanshya Copper Mines Plc shall maintain the speed limit in all access roads that shall not endanger life or cause dust.

3.1.5 CNMC Luanshya Copper Mines Plc shall maintain noise levels within acceptable levels throughout the project cycle.

3.1.6 CNMC Luanshya Copper Mines Plc shall ensure that there is minimal disturbance to the nearby vegetation and shall conduct progressive rehabilitation and revegetation of disturbed areas throughout the project cycle.

3.1.7 CNMC Luanshya Copper Mines Plc shall collect, decontaminate and dispose of in an environmentally friendly manner hydrocarbon contaminated soils at the Baluba Mine Heavy Equipment Repair Workshop.

3.1.8 CNMC Luanshya Copper Mines Plc shall employ all necessary safety measures to ensure the operations of Muva Hill Quarry does not endanger the life of the nearby communities.

3.1.9 All compensation issues arising from the project operations shall be handled appropriately in consultation with the Ministry of Agriculture and the Ministry of Community Development and Social Welfare.

3.1.10 CNMC Luanshya Copper Mines Plc shall obtain permits from ECZ and comply in full with the following regulations throughout the project cycle:

a) Waste Management Regulations, SI No.71 of 1993;
b) Water Pollution Control Regulations, SI No. 72 of 1993;
c) Hazardous waste Management Regulations, SI No. 125 of 2001; and,
d) The Air Pollution Control (Licensing and Emission Standards) Regulations, 1996.

3.1.11 CNMC Luanshya Copper Mines Plc shall prepare a closure report outlining implementation of all the environmental management commitments presented in the Environmental Project Brief at the end of the project for verification by the Environmental Council of Zambia.

3.2 The Council **advises** CNMC Luanshya Copper Mines Plc:

3.2.1 To obtain any other relevant authorizations such as but not limited to:

a) The Workers Compensation Act;
b) The Public Health Act;
c) The Factories Act;
d) The Town and Country Planning Act;
e) The National Heritage and Conservation Act;
f) The Mines and Minerals Act; and,
g) The Employment Act.

3.2.2 To make available information on HIV/AIDS, safety, health and environment to employees before commencement of the project.

3.3 The project shall be implemented within **three years** from the date of approval. Failure to implement the project within the said period shall render this Decision Letter invalid and the developer shall re-submit the EPB.

3.4 CNMC Luanshya Copper Mines Plc shall comply with environmental standards and/or specific limits of particular pollutants as its responsibility. Thus, compliance with ECZ recommended measures **does not** exempt the developer from its responsibility if such measures do not achieve compliance with environmental control standards.

3.5 The Council may suspend or cancel this Decision Letter **without notice** should CNMC Luanshya Copper Mines Plc fail to comply with any of the approval conditions.

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Date

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Paul M. Banda
Director
ENVIRONMENTAL COUNCIL OF ZAMBIA

Table of Contents

1. INTRODUCTION

In June 2009, CNMC Luanshya Copper Mines (CLM) Plc took over the operations of the closed Luanshya Copper Mines (LCM) Plc. In additional and as part of the Sale Agreement, the abandoned planned implementation of the Muliashi Project by LCM was carried over as well.

During the revision and adoption of the Muliashi Project EIS, CLM committed to uphold the construction works of the Plant and the mitigation of all environmental concerns as planned and documented in the EIS previously submitted, and on which a Decision letter was issued by the Environmental Council of Zambia (ECZ). All modifications, inclusions and omissions where necessary would thus be communicated, in writing to ECZ and other relevant authorities before such actions are implemented.

Silica mining and extraction at Muva Hill was commenced during the ZCCM era, with a primary mandate then being supplying silica products to **ZCCM Nkana Division** for Mineral Processing. Thereafter, when ZCCM was privatised silica mining at Muva hill was abandoned. Mpelembe Drilling Company was subcontracted to revive the Silica quarry facility under **RAMCOZ**. Now under CNMC Luanshya Copper Mines, the urgent need to develop the Muliashi Open pit Mine, there's need to source for all relevant materials to use during the construction phase. Silica is one such material that was identified to be suitable for lining the surfaces of the leach pads. This development has triggered plans for the establishment of a Quarry Facility at Muva Hill which is already under a CNMC Luanshya Copper Mines Plc **Large Scale Mining Licence No. 8394-HQ-LML**. Therefore, this EPB discuses the proposed establishment of quarry activities for Silica extraction at Muva Hill. The report also highlights the

anticipated socio-economical and environmental impacts associated and possible mitigation measures.

1.1 DEVELOPER'S PHYSICAL ADDRESS AND CONTACT PERSON

CNMC Luanshya Copper Mines Plc

PO Box 90456

Luanshya

Zambia

Tel: +260 2 513400
Fax: +260 2 512223

Contact person:

Deputy Chief Executive Officer-Production, Safety & Environment

Mr. Wang Jingjun

wangjingjun@lcm.com.zm

1.2 DIRECTORS/ SHAREHOLDERS

The under listed are the names of Directors, residential addresses, nationality and Shareholders of CNMC LUANSHYA COPPER MINES Plc.

DIRECTORS	PHYSICAL ADDRESS	NATIONALITY	NRC/PASSPORT
Mr. Tao Xinghu	32 Enos Chomba avenue, Kitwe	Chinese	S90139436
Mr. Luo Xin'geng	Directors Lodge, Luanshya	Chinese	P00001932
Mr. Gao Xiang	Directors Lodge, Luanshya	Chinese	P00153188
Mr. Wang Jingjun	Directors Lodge, Luanshya	Chinese	G32341017
Mr. Li Haiyang	Directors Lodge, Luanshya	Chinese	G01010027
Mr. Li Jiye	Directors Lodge, Luanshya	Chinese	P00300169
Mr. Zhang Jingjing	Directors Lodge, Luanshya	Chinese	P00273732
Dr. Godwin M. Beene	P.O.Box 31969, Lusaka	Zambian	220376/74/1
Dr. Peter R.K. Chileshe	Plot No.6, Mwaiseni close, Chingola	Zambian	207964/67/1
Mr. Justine Masiye	Plot No.4861 Kariba Road, Kitwe	Zambian	160714/53/1
SHAREHOLDER: CNMC LUANSHYA COPPER MINES, 80%		Chinese	
ZCCM-IH, 20%		Zambian	

1.3 CNMC TRACK RECORD-INVESTMENTS ELSEWHERE

Founded in 1983, China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC) is a large-scale central enterprise under the management of the State-owned Assets Supervision and Administration Commission of the State Council. Its major businesses include the development of nonferrous metal mineral resources, construction engineering, and the relevant trade and technological services. It possesses two listed companies in China, namely NFC (000758) and OTIC (000962). In fact, CNMC has been a pioneer among Chinese enterprises to implement the "going abroad" strategy and to carry out international investment and cooperation in nonferrous metal mineral resources field.

The nonferrous metal mining projects built and put into production abroad by CNMC include Chambishi Copper Mine in Zambia, Chambishi 150,000-ton Copper Smelter, Chambishi Leach Plant, Chambishi Sulphuric Acid Plant, Tumurtin-Ovoo Zinc Mine in Mongolia, and Thai-China Lead-Antimony Alloy Plant in Thailand. The projects under construction and development include Zambia-China Economic & Trade Cooperation Zone, Western ore body of Zambia Chambishi Copper Mine, Myanmar Tagaung Taung Nickel Mine, and bauxite in Laos. In addition, CNMC is negotiating a group of projects in venturous prospecting and development of nonferrous metal resources and carrying out overseas investment cooperation in various forms in nonferrous metal mining industries, which involve copper, aluminium, zinc, nickel, tantalum, niobium, and beryllium. CNMC possesses ten million tons of nonferrous metal resources and over 300 million tons of bauxite resources in overseas market and is now after nearly 80 million tons of heavy nonferrous metal resources and two billion tons of bauxite resources.

CNMC Luanshya Copper Mines (CLM) Plc took over operations of Luanshya

and Baluba Mines, Processing Plant and associated support service units in June 2009.

CNMC-Luanshya Copper Mines (CLM) Plc acquired 80% of shares which previously were held by ENYA Holdings, a company owned in equal parts by IMR group and the BSGR group, with the Zambian Government retaining its 20%, through ZCCM Investment Holdings (ZCCM-IH).

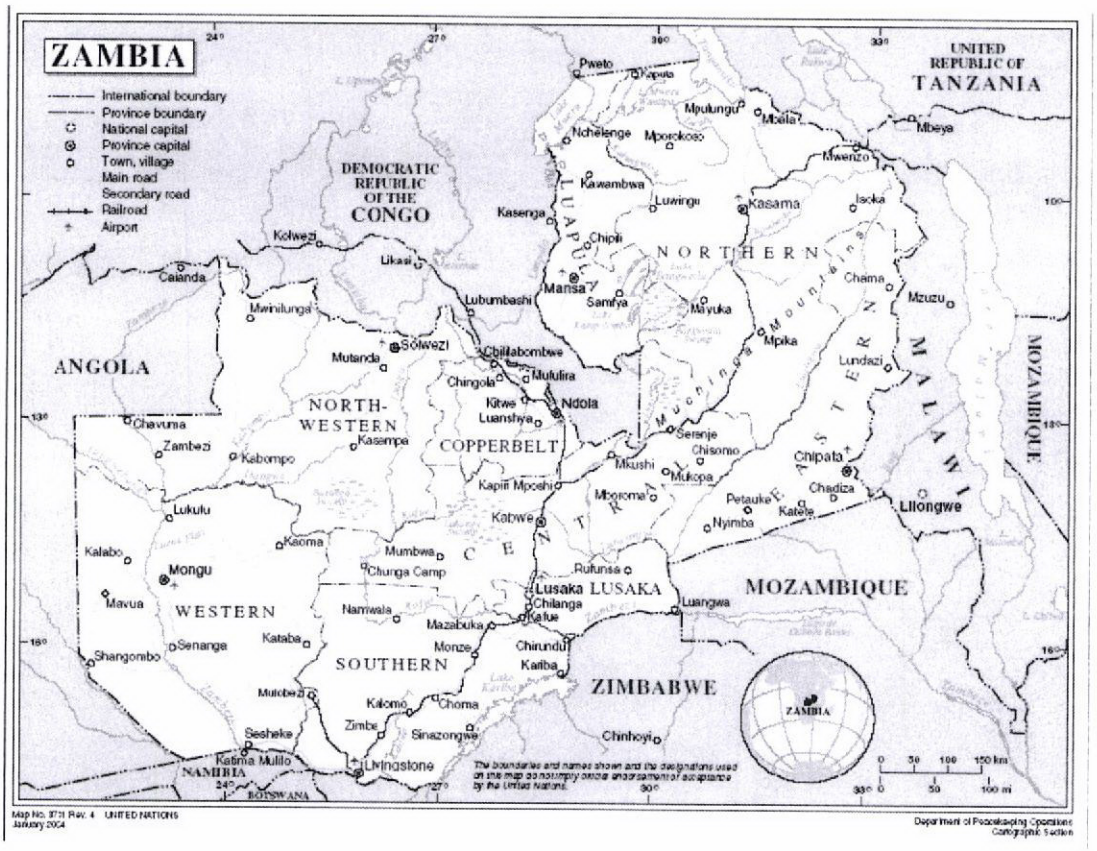
2.0 DESCRIPTION OF THE PROJECT LOCATION

2.1 Regional and Local Setting

Zambia is divided into nine administrative provinces, with the project area located on the Copperbelt Province, which again is subdivided into 10 administrative districts, namely:

Luanshya, Masaiti, Mpongwe, Mufulira, Chililabombwe, Chingola, Kalulushi, Kitwe, Lufwanyama, and Ndola. The Provincial administration offices are based in Ndola town centre.

Refer to the map below for an illustration of the provincial boundaries in Zambia.

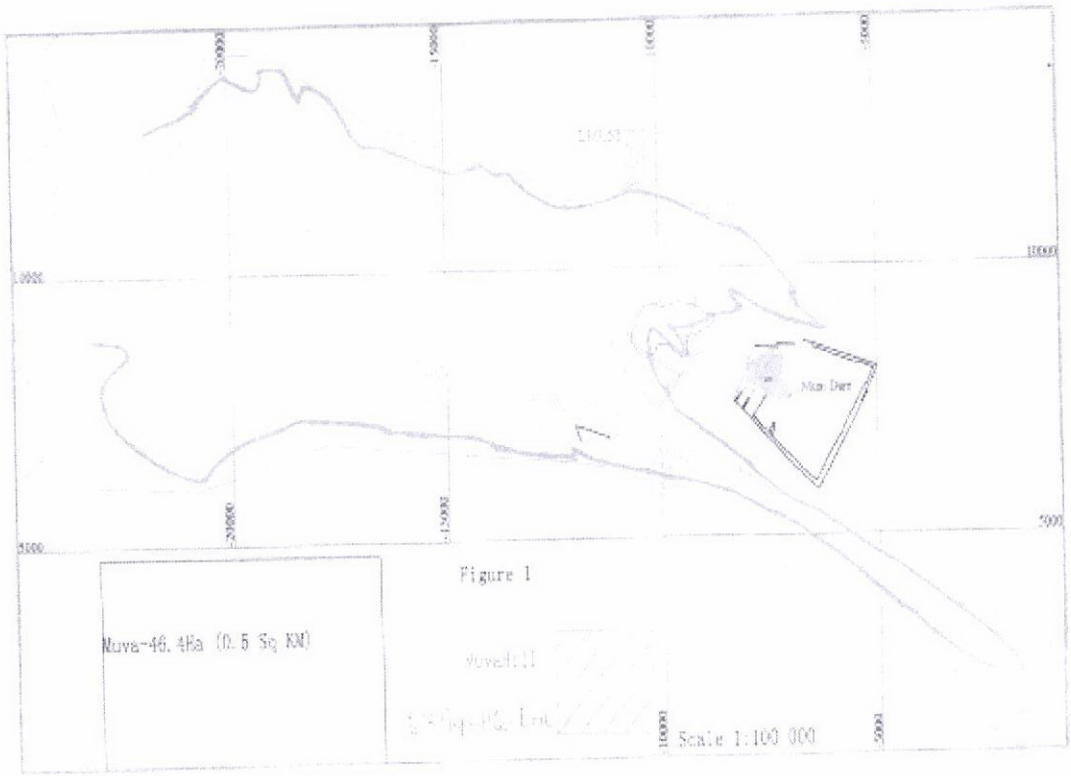


2.2 Project Site Location

Muva Hill is situated in Luanshya at the southern extremity of the Copperbelt Province of Zambia, **13° south of the Equator** at an altitude of **1260 metres** above sea level.

The proposed quarry facility is planned to be situated at Muva Hill, as it will be the main source of raw material for silica quarrying. The required mining and associated processing plant will cover **16,792.10m² (1.679 Ha)** of the total Muva Hill licensed area of **46.4 Ha.** In relation to other existing facilities around, Muva Hill lies about 1.1 Km west of Baluba Mine Shaft, and about 2 Km north-west of Muliashi Open Pit Mine proposed site. The earmarked location site had been formerly used for similar Silica extraction in the recent past. However, there are no permanent Processing Plant structures that have been left behind for two reasons; the first one is that most of the equipment that had been deployed to site was mobile, and if stationary, it consisted of on-site assembled plant machinery. Secondly as a result of the Muva Hill being located on the outskirt of the Mining Licensed area, unknown people had strayed into the Mining area and vandalised a few structures that could not be demobilised at the time of closure of quarry operations.

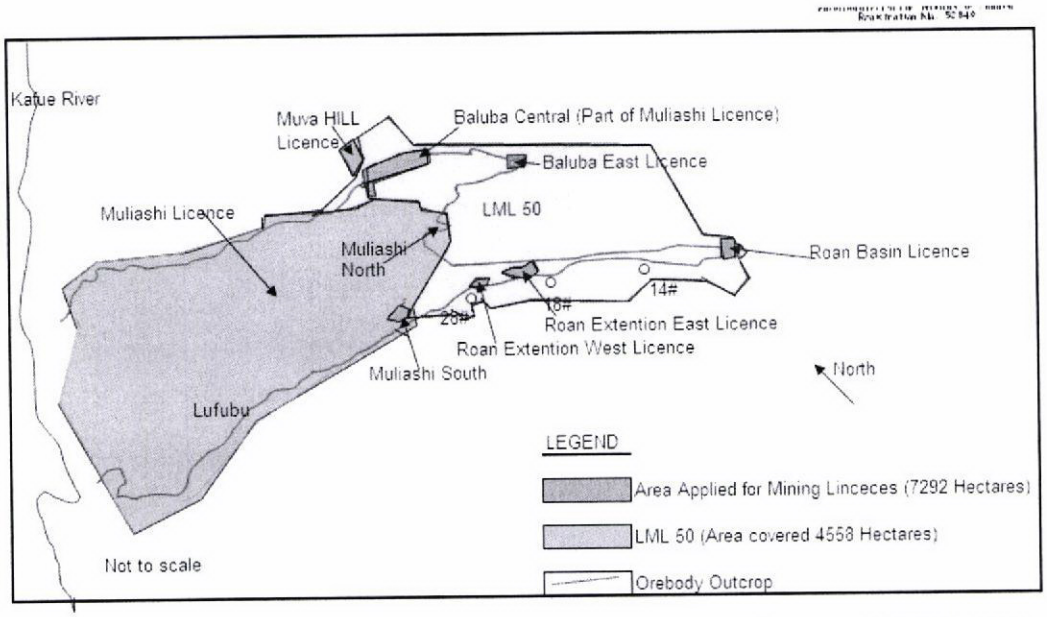
Figure 2.2 Location Map for Muva Hill.



CNMC Luanshya Copper Mines Plc is holder of numerable large scale mining licenses ranging from, 8393-HQ-LML, 8097-HQ-LML, 8392-HQ-LML, 8394-HQ-LML, 8395-HQ-LML, 8396-HQ-LML and 8404-HQ-LML. These Mining licenses cover an extensive area of land extending from Plant & Works area, Decommissioned Shafts area, Muliashi Open Pit & Plant area Baluba Mine and the associated plant.

The map below shows the areas covered under the current CLM operating licenses described above.

Figure 2.3 CLM Mining Licenses coverage.



Note; The mining license LML 50 has since been revised to read 8097 -HQ-LML

The Mining facilities including environmental liabilities of CNMC Luanshya Copper Mines are located to the west of the town of Luanshya, 40 km south-east of the town of Kitwe and 30 km north-west of Ndola.

3. 0 LEGISLATIVE AND LEGAL FRAMEWORK

The establishment and subsequent operation of the proposed Silica Quarry at Muva Hill will be governed and operate in accordance with the following relevant pieces of legislation.

3.1 The Environmental Protection and Pollution Control (EPPCA) Act No 12 of 1990

This is the principal Act concerning the Environment in Zambia. Its main functions include the protection of the environment and control of pollution in particular so as to provide for the health and welfare of people, animals, plants and the environment in general. It also demands that an **Environmental Impact Assessment (EIA)** be conducted to assess the effects of all projects before implementation, and decide the scope and nature of environmental planning and management needed. Statutory Instrument (**SI No. 28 of 1997**) also requires that an Environmental assessment or an **Environmental Project Brief (EPB)** be fulfilled before development can commence. The authority concerned with Environmental Assessments in Zambia is the Environmental Council of Zambia (ECZ), which also undertakes the Co-ordinating, enforcement and supervisory role.

Below are the subsidiary Statutory Instruments of the environmental Protection and Pollution control Act that are relevant to the proposed project:

- **Statutory Instrument No.72 of 1993**

Water Pollution Control (Effluent and Waste Water) Regulations- provides for licensing of liquid waste discharge to the environment and also provides for statutory discharge limits for respective parameters.

- **Statutory Instrument No.20 of 1994**

Pesticides and Toxic Substances Regulations- provides for licensing of importation, transportation, distribution and storage of pesticides and toxic substances.

- **Statutory Instrument No.141 of 1996**

Air Pollution Control (Licensing and Emission Standards) Regulations- provides for licensing of gaseous waste emissions to the environment and also provides for statutory discharge limits for respective parameters.

- **Statutory Instrument No.125 of 2001**

Hazardous waste Management Regulation- provides the framework for licensing of solid hazardous waste, transportation and operating/owning of a hazardous waste disposal site.

3.2 Local Government Act

The Act came into force in 1991 and provides for the establishment of Councils in districts, the functions of local authorities and the local government system. Some of these functions relate to pollution control and the protection of the environment in general.

3.3 The Investment Act of 1993

Passed in 1993, the Act provides a legal framework for investment in Zambia. The Act relates to environment indirectly by providing incentives for tree planting, soil and water conservation activities. The Act further

recognises the role of other agencies including those responsible for environmental protection in authorising specific projects.

3.4 Land Act of 1995 and Land Acquisition Act of 1995

The Land Conversion of Titles Act was enacted in 1975 and amended in 1990. The Act provides for the alienation, transfer, disposition and charge of land. Although the Act does not refer to matters of conservation this Act is important in that land is one of the basic natural resources. The Act also provides for compulsory acquisition of land by the president whenever he is of the opinion that it is desirable or expedient to do so in the interest of the Republic.

3.5 National Heritage Conservation Commission Act of 1989

Enacted in 1989, the Act provides for the conservation of ancient, cultural and natural heritage, relics and other objects of aesthetic, historical, pre-historical, archaeological or scientific interest.

3.6 The Mines and Minerals Development Act, 2008.

This act is the revised law relating to the prospecting for, mining and processing of minerals and it supersedes the Mines and Minerals Act of 1995. The Act provides for matters connected with or incidental to acquiring Prospecting, Mining and Processing of Minerals Licenses. Issues of provision of proper environmental protection, commitment to investments, adequate financial resources and promotion of local business development have been included. The act also stipulates the contribution of the mineral resources of the developer towards the **Environmental Protection Fund (EPF)** to ensure

the developer implements the progressive mine rehabilitation plan and the decommissioning and closure plan as described in the EIA.

3.7 The Natural Resources Conservation Act of 1970

Enacted in 1970, the Act provides for the establishment of the Natural Resources Advisory Board whose main functions are to ensure the proper use, conservation and improvement of natural resources. Some of the provisions of the Act have since been repealed with the coming into force of the EPPCA. This includes the abolition of the Natural Resources Advisory Board.

3.8 The Factories Act, 1967

Enacted in 1967, the Act regulates the conditions of employment in factories and other places of work as regards the safety, health and welfare of persons employed in such places. The Act also provides for the examination and inspection of certain plant and Machinery in order to ensure safety.

3.9 Pneumoconiosis Act (No. 13 of 1994)

The Act provides for the requirement for certificates of fitness for all mine employees that work in scheduled mine areas.

3.10 Forestry Act of 1974

The Forest Act of 1974 has provisions for the management, conservation and protection of forests and trees in Zambia. The Act prohibits the felling, collecting or injuring of forest products in protected forest areas or forest reserves, unless a license has been obtained. It also prohibits construction and operation of machinery within forest reserves or protected areas without the license. The mine is located outside a forest protected area and is not in the

forest reserve area.

3.11 INTERNATIONAL CONVENTIONS AND PROTOCOLS

The International Conventions listed below have particular relevance to the Environmental Management Plans as the developer must be aware of commitments made by the host country under the relevant conventions to ensure that project activities, environmental emissions and resource use are not in conflict therewith.

3.11.1 The Basel Convention on the Control of Transboundary movements of Hazardous wastes and their disposal-1989

The Basel Convention was developed under the auspices of the United Nations Environmental Programme (UNEP), in response to the growing worldwide awareness of the problem of international traffic in hazardous waste. The Convention was adopted in 1989 and entered into force on May 1992.

The Basel Convention is said to be the first and foremost global environmental treaty that strictly regulates the trans-boundary movement of hazardous wastes and other wastes, and obligates parties to ensure their environmentally sound management, especially during the disposal process.

The objectives of the convention are:

- To ensure that waste is disposed of as near as possible to the place or source of its generation;
- To reduce trans-boundary waste and where it cannot be avoided, to be disposed of in an environmentally sound and efficient manner;

- To provide assistance to developing countries in the management of hazardous waste and the generation thereof.

Zambia ratified the Basel Convention and is mandated in line with the Basel Convention and the EPPCA to ensure that hazardous waste movements in and out of the country and the disposal thereof are effectively controlled to ensure protection of human health and the environment.

Since there are no hazardous wastes disposal facilities in Zambia, hazardous waste may require disposal on site and it is important that licenses are obtained from the ECZ for the storage and disposal of hazardous waste on site.

3.11.2 The United Nations Framework Convention on Climate Change (UNFCCC)-1992

The objective of this Convention, as stated in Article 2, is "to stabilise, in accordance with the relevant provisions of the Convention, concentrations of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner".

Zambia ratified the UNFCCC and as part of the Convention is required to record their emissions of greenhouse gases (GHG). To facilitate the Government's responsibility under the Convention it is `necessary for the MP to estimate and record the GHG emissions generated from the process plant and mining activities on the basis of the chemical composition or through direct measurements.

3.11.3 Convention Concerning the Protection of the World Cultural and Natural Heritage

This convention was ratified by Zambia on 4 June 1984. The Convention is the first official international instrument stipulating the urgent need to identify and protect cultural and natural heritage of outstanding universal value, which is immovable and irreplaceable.

The Convention strongly affirms the shared moral and financial responsibility to protect common cultural and natural heritage, through international co-operation and action.

An assessment will be required to observe the provisions of the Convention and ensure that any proposed mining infrastructure does not affect and is located away from any cultural and natural heritage sites.

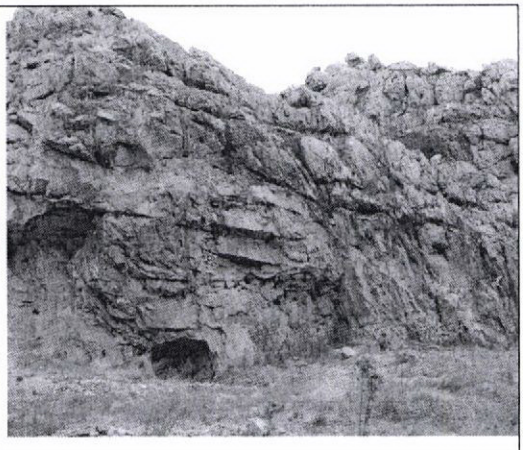
4.0 DESCRIPTION OF THE PROJECT

4.1 Objectives of the Project

The main objective of this Silica Quarry Project is to provide Crushed Silica stones of predetermined size for lining the acid leaching pads and the floors of the tank houses at Muliashi Open Pit Processing Plant. As earlier documented in the Muliashi EIA, electrowinning is planned to be used in the extraction of Copper (**Cu**). Silica will be used to line the surfaces of leaching pads because of its stable chemical property when it is brought into contact with sulphuric acid (H_2SO_4). Surplus stocks of silica will be stocked for plant use at Muliashi.

The EIA regulation demands that socio-economic and environmental impacts consequent to the implementation of a project, construction and operations are assessed well in advance. This EPB highlights potential impacts and subsequent mitigations of the Proposed Silica Quarrying at Muva Hill west of Baluba B2 Shaft. This project is intended to support the initial construction and to a lesser extent during the actual mineral processing activities under the Muliashi Project.

1. All weather Access Road



2. Quartz Outcrop at Muva Hill