



METMINEC (PTY) LTD
MINING THE FUTURE

TANZANIA LITHIUM EXPLORATION

HOMBOLO LITHIUM PROJECT

Rollout Plan

Authors:

Clifford Mosala: B.Tech. (Geology)

Permly Shingange: B.Tech. (Geology), MTech (Geophysics), PhD candidate (Geophysics)

Knobbs Mathenjwa: BSc Hons (Geology)

Reviewed by:

Dr Gerhard Du Plessis: BSc Hons, MSc, PhD

Approved by:

Godfrey Mothapo: BSc Hons (Geology), MSc (Eng), BA (Econ)

Name and Signature of the Project Leader:

.....
Makgamatho Godfrey Mothapo Pr. Sci. Nat

Date: 13 November 2023



METMINEC (PTY) LTD
MINING THE FUTURE

Table of Contents

1. INTRODUCTION	3
2. PROJECT TEAM	3
3. PROJECT BACKGROUND AND LOCATION	6
4. GEOLOGY OF THE AREA.....	7
5. PRIORITY SITES	8
6. PROJECT TIMELINES (GANTT CHART)	10
7. PROJECT KICK-OFF	11
7.1. Objective: Project Kick-Off.....	11
7.2. Objective: Line Preparation and Magnetic Survey	12
8. CONCLUSION	14
REFERENCES	15

Table of Figures

Figure 1: Locality map of the project area.	6
Figure 2: Geological map of the project area (Geological Survey of Tanzania)	7

Table of Tables

Table 1: Project Gantt Chart	10
------------------------------------	----



METMINEC (PTY) LTD

MINING THE FUTURE

1. INTRODUCTION

METMINEC (Pty) Ltd was appointed by **CGRA Mining Inc.** to execute a phased geological exploration program on a prospecting tenement / concession in the Hombolo area on Tanzania. This document aims to introduce the primary exploration team members who will be involved in this project, and outline the action plan and timelines associated with completing the respective activities that need to be performed.

2. PROJECT TEAM

METMINEC has assembled a highly competent team of professionals to conduct the geological exploration work by applying its own proprietary tried and proven methodology with a demonstrable track record of success, in a phased, risk-based approach to perform all the activities required on the prospecting tenement / concession held by the holder of the awarded permit. This team of professionals is comprised of:

Godfrey Mothapo - Project leader Geologist



Godfrey Mothapo is a BSc Hons (Geology) graduate, and also holds a MSc Engineering Degree, and a BA (Economics and Politics).

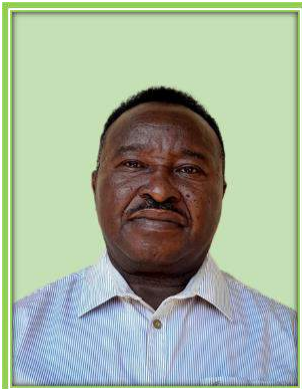
As a qualified geologist, Godfrey is registered with the South African Council for Natural Scientific Professions (SACNASP) as a Professional Natural Scientist (Pr. Sci. Nat. - Reg. No 400033/09). He currently is the Managing Director of **METMINEC** (Pty) Ltd, with more than 20 years mining industry experience with exposure to platinum, diamond, tin, coal, chrome, manganese and other base metals. Godfrey was formerly professionally employed as the Executive Manager: Business Development at Mintek, with international mining exposure in Russia, Zimbabwe, Swaziland, Mozambique, Burundi, Mali, the Democratic Republic of Congo (DRC), and Uganda.



METMINEC (PTY) LTD
MINING THE FUTURE

In his earlier professional career, Godfrey performed the roles of an exploration geologist, and a mine geologist working in various mining houses in South Africa.

Knobbs Mathenjwa - Project Geologist



Knobbs Mathenjwa has BSc Hons in Geology from University of Witwatersrand and has other mining related certificates.

Knobbs is the consummate professional geologist with over 30 years work experience in the gold and platinum mining industry. He participated in various goldfields exploration projects throughout his career and worked with various reputable consultants in the industry.

He has a wide range of geological skills, primarily within the gold mining sector where he spent most of his 30 years working with the likes of Tau Lekoa Goldmines, various Goldfield Shafts, Harmony and Sibanye Gold mines shafts, together with many operations in Klerksdorp owned by Gold One, Mintails, and Blyvooruitzicht Gold Mine.

Tshegofatso Clifford Mosala - Senior Geologist



Tshegofatso Mosala is a geologist by profession, and has completed various mining related courses. He acquired extensive experience in exploration and mining industry in a career spanning more than 15 years. He is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP), and he is also a member of the Geological Society of South Africa (GSSA).

Tshegofatso is currently appointed as a Senior Geologist at **METMINEC**, and some of his responsibilities include - but are not limited - project planning,

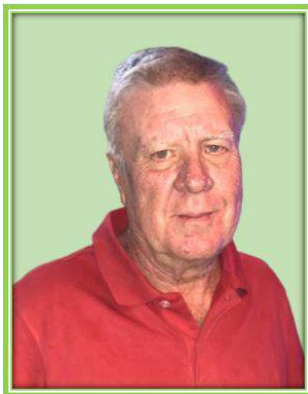


METMINEC (PTY) LTD
MINING THE FUTURE

project costing, on site project management, core logging, sampling, interpretations, and report writing.

He has worked in remnant mining environments, and as section manager mining, and geology manager. Tshegofatso has practical mining experience in various commodities namely; chrome, platinum, base metals, diamonds and coal.

Dr Gerhard du Plessis – Geologist/Independent Reviewer



Dr Gerhard du Plessis is a certified geologist. He has a BSc (Hons) Geochemistry degree, a MSc degree, and a Ph.D.

His current primary activity at is to focus on new business development. He has extensive experience in geological field mapping, underground mining, geochemical exploration, exploratory project management, ore resource management, and geochemical laboratory management. He has also worked as a competent person for Mbada Diamonds in Zimbabwe under the SAMREC diamond code.

Permly Shingange Ralushai – Senior Geophysicist



Permly is geophysicist and geologist with more than 15 years of experience in mining and mineral exploration.

Permly is currently working as Geophysics Consultant at **METMINEC** deployed on various projects in Uganda, the Democratic Republic of Congo (DRC), and Tanzania; as well as on local projects in South Africa. She is an expert at data interpretation, field work, and various geophysical methodology applications for both in mineral, underground exploration, and geotechnical investigations both locally and internationally. She is also a Geophysics lecturer at Tshwane University of Technology (TUT) where she also supervises postgraduate students, and she performs the role of coordinator for the Work Integrated Learning (WIL) program of TUT Geology Department.



METMINEC (PTY) LTD
MINING THE FUTURE

Her career experience includes having worked in the Nickel mining sector as a production geologist, and later as exploration geologist.

3. PROJECT BACKGROUND AND LOCATION

The project area (Hombolo) extends over the Dodoma and Manyara Regions of Tanzania. Hombolo is situated about 35 km southeast of the capital city, Dodoma (Figure 1). Topographically the project area occupies the central plateau of Tanzania with an elevation ranging from 1200 to 1500 m above sea level (Figure 2). This area is characterized by a semi-arid climate with relatively warm temperatures throughout the year that varies according to altitude ranging from 15 degrees Celsius in July to 30 degrees Celsius in October. It receives an average of 570 mm of precipitation per year, the bulk of which occurs during its wet seasons between November and April (Kisamba and Li, 2023).

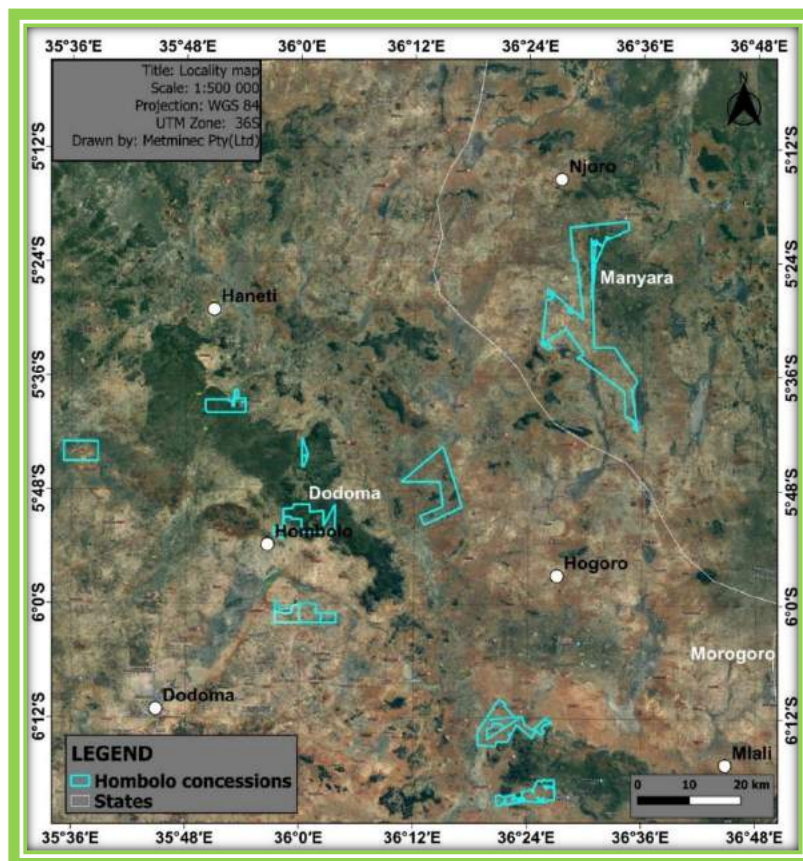


Figure 1: Locality map of the project area.



METMINEC (PTY) LTD
MINING THE FUTURE

4. GEOLOGY OF THE AREA

The prospecting concessions in Hombolo are underlain by various lithological units of Tanzania Craton and Mozambique Mobile Belt (Figure 2).

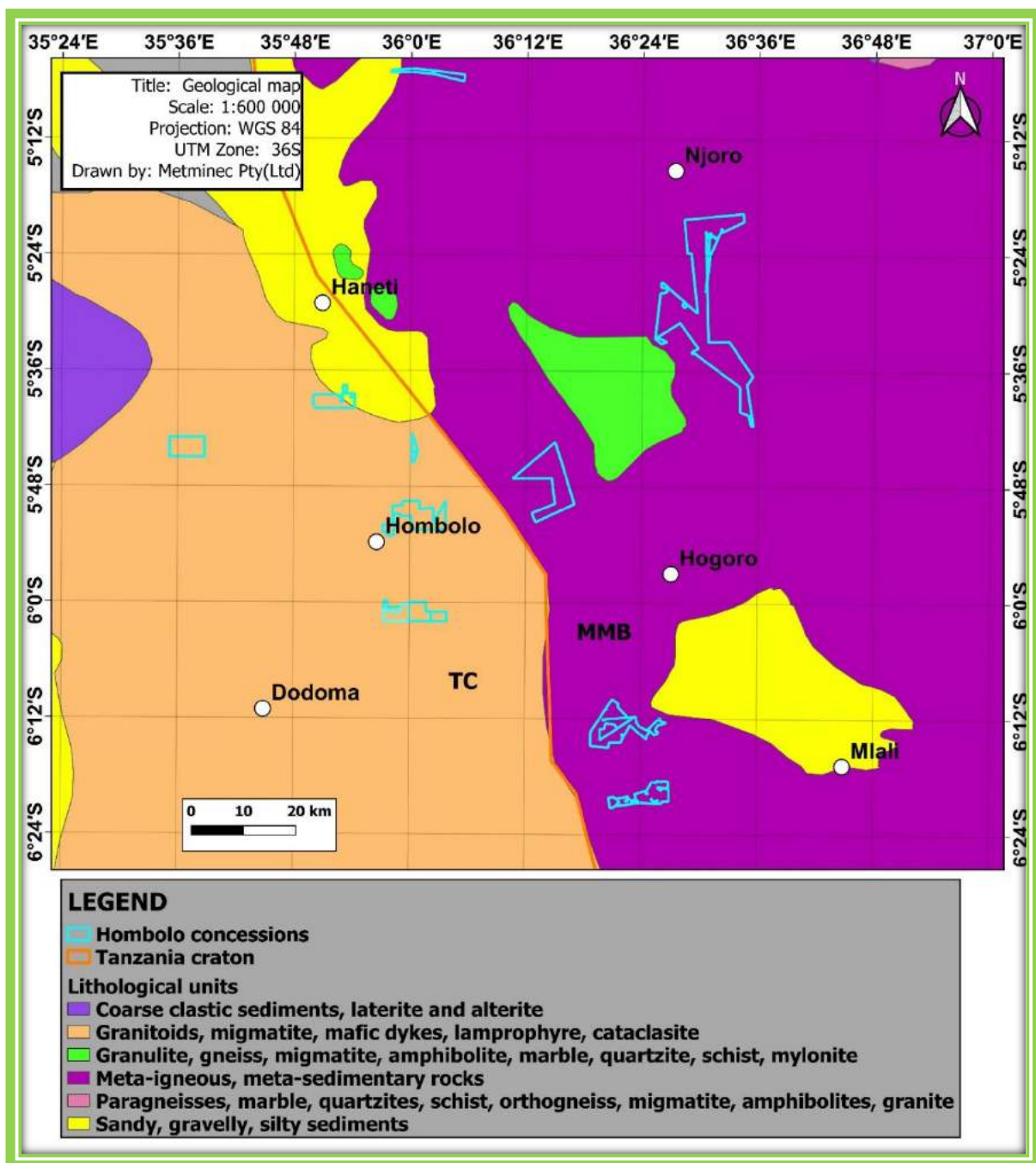


Figure 2: Geological map of the project area (Geological Survey of Tanzania)



The concessions within the Tanzania Craton are predominately characterized by quartzite, granitoids, mica schist, amphibole schist, and quartz-feldspar gneiss rocks of the Dodoma Formation. This formation is located within the NW-SE-oriented Hombolo-Msangani belt (CMD, 2022), which hosts the classic Hombolo lithium-bearing pegmatites. To the east of the craton, the Mozambique Mobile Belt is characterized by meta-igneous and meta-sedimentary lithological units including granulite, migmatite, and granites.

The pegmatite lithium deposits in the project area are typically found within amphibolite schist, quartzite, and quartz-feldspar gneiss in a form of dykes, veins, and lenticular bodies. The emplacement of pegmatites is believed to be structurally controlled and trends in the NW-SE direction. The lithium deposits are found in the form of spodumene and lepidolite, which are the most common lithium-bearing minerals. In addition to these lithium-bearing minerals, pegmatites in the project area are also a major source of tourmaline, beryl, moonstone, and mica. The pegmatites generally range from 50 to 1000 m long in the region (CMD, 2022).

5. PRIORITY SITES

The priority sites were selected using remote sensing images, specifically Landsat 8 (OLI) images. The images were processed using the Environment for Visualizing Images (ENVI) software to locate areas that have the potential to host lithium deposits by spectrally mapping lithium-bearing minerals: spodumene and lepidolite. This was done to generate follow-up targets within the prospecting concessions of the Hombolo area which is the historic host of lithium-bearing pegmatites that makes its vicinity one of the main attractions for the search of new lithium deposits in Tanzania.

Pursuant to the professional team's assessment of the Landsat image processing results, several follow-up targets were generated within the prospecting concessions. Some of these targets correspond to closed geomorphic features forming lenticular-like bodies, which is a



METMINEC (PTY) LTD
MINING THE FUTURE

diagnostic morphological feature of some of the lithological units hosting pegmatites in the region.

In the western part of the Hombolo region, there is an NW-SE-oriented broad linear mineral cluster cutting across the Hombolo Lithium Block and extending to prospecting concession to the west. This mineral cluster corresponds to the NW-SE oriented Hombolo-Msangani belt which is known to host historic Hombolo lithium-bearing pegmatites; thus, making this linear mineral cluster one of the areas to prioritize for lithium exploration.

The mineral results generated from the processing of Landsat images attained an accuracy of 90%, thus implying excellent mineral mapping. Site visit observation and findings at the selected follow-up targets further validated the mineral maps as the sites visited with guidance from mineral mapping results are characterized by pegmatitic rocks and/or materials.

Based on the combined interpretation of mineral mapping results, topography, geology, and field observation, the following concessions were assigned the highest productivity level among the concessions in Hombolo area:

- **PL/11955/2022;**
- **PL/17271/2021** (*a portion thereof*); and
- **PL/19510/2022.**

These concessions are characterized by high anomalies of spectrally mapped lithium-bearing minerals, flat terrain, and proximal to known pegmatites.

In addition to these, **PL/11955/2022** is along the Hombolo-Msangani belt which is a host to Hombolo lithium-bearing pegmatites. A portion of **PL/17271/2021** is adjacent to the Auroch Lithium Exploration Project Block. The Auroch block is part of the Hombolo Lithium Block.

In light of the findings, **METMINEC** the following exploration activities will be undertaken: -



METMINEC (PTY) LTD
MINING THE FUTURE

- Field Mapping and sampling
- Geophysical survey to delineate potential lithium deposits

6. PROJECT TIMELINES (GANTT CHART)

Below are the key project timelines, followed by the Gantt chart (*Table 1*) setting out the activities and task deliverables against the project timelines

- Start Date: Q4 2023
- End Date: Q1 2024
- Project Duration: 4 Months

HOMBOLO PROJECT SCHEDULE			
Metminec Project Plan			
		Project Start Date	Q4 2023
		Project Lead	Godfrey Molhapo
WBS	TASK	START	END
1	Fieldwork		-
1.1	Geological Mapping	Q4 2023	Q1 2024
1.2	Geochemical/soil sampling	Q4 2023	Q1 2024
1.3	Trenching/sampling of bedrock	Q4 2023	Q1 2024
2	Geophysics		-
2.1	Line preparation	Q4 2023	Q1 2024
2.2	Magnetic Survey (50km)	Q4 2023	Q1 2024
2.3	QA/QC Report	Q4 2023	Q1 2024
2.4	Data Interpretation and Modelling	Q1 2024	Q1 2024
2.5	Borehole Target Generation	Q1 2024	Q1 2024
3	Site Preparation		-
3.1	Mobilization	Q1 2024	Q1 2024
3.2	Bush Clearing	Q1 2024	Q1 2024
4	Drilling		-
4.1	Drilling Activity	Q1 2024	Q1 2024
5	Core Sampling Program		-
5.1	Core Logging	Q1 2024	Q1 2024
5.2	Core Cutting and Sampling	Q1 2024	Q1 2024
5.3	Quality Control and Analysis(QA/QC)	Q1 2024	Q1 2024
5.4	Laboratory Result Anaysis	Q1 2024	Q1 2024
6	Geological Modelling		-
6.1	Modelling	Q1 2024	Q1 2024
7	Reporting		-
7.1	Result Reporting and review by independent expert	Q1 2024	Q1 2024
7.2	Final Report Writing	Q1 2024	Q1 2024
7.3	Report Presentation	Q1 2024	Q1 2024
8	Project Duration		-
8.1	Project Duration	Q4 2023	Q1 2024

Table 1: Project Gantt Chart



METMINEC (PTY) LTD
MINING THE FUTURE

7. PROJECT KICK-OFF

7.1. Objective: Project Kick-Off

Onboard the team, to orientate, induct, secure alignment, and assign roles to achieve the required outputs and project deliverables against deadline dates as set.

Participants:

- Godfrey Mothapo - Project Principal/Lead
- Clifford Mosala - Geologist
- Mixo Vukeya - Geologist
- Dr G Du Plessis - Geologist/Specialist
- Permly Shingange - Geophysicist
- Marcus Petros - Geophysics technicians
- Oris Kandeya - Geophysics technicians

Actions:

- Geological field work at Hombolo: Q1 2023 (see Gantt chart)
- Meeting immigration authorities and the Department of Minerals
- Stakeholder Engagement:
 - Meet Community Leaders
 - Team Introduction and Induct Local employees
- Site Walk-about
- Geological field mapping
- Geophysics (data collection, processing & interpretation)
- Drilling (target boreholes)



METMINEC (PTY) LTD
MINING THE FUTURE

Participants:

- Clifford Mosala - Geologist
- Mixo Vukeya - Geologist
- Dr G Du Plessis - Geologist/Specialist

7.2. Objective: Line Preparation and Magnetic Survey

Line Preparation is the process of preparing the survey lines for the magnetic survey. This includes clearing vegetation, setting up survey stations, and marking the lines and involves the following:

- The 1st step in line preparation is to clear vegetation from the survey lines. This can be done by hand or with machinery.
- The 2nd step is to set up survey stations. Survey stations are points along the survey line that are used to reference the magnetic data. Survey stations can be marked with stakes, flags, or paint.
- The 3rd and final step in line preparation is to mark the lines. This can be done with tape, flags, or paint.

Magnetic Survey is a geophysical method that measures the Earth's magnetic field. The data from the magnetic survey can be used to map the subsurface geology.

The magnetic survey is conducted by using a magnetometer, a device that measures the Earth's magnetic field. Magnetometers can be mounted on the ground, in the air, or in water.

The data from the magnetic survey can be used to map the subsurface geology.

Magnetic Survey encompasses the following activities:



METMINEC (PTY) LTD
MINING THE FUTURE

- Collecting magnetic data
- Processing magnetic data
- Interpreting magnetic data

Magnetic surveys can be used to identify a variety of geological features, such as faults, folds, and intrusions. Magnetic surveys can also be used to identify mineral deposits.

Participants:

- Permly Shingange – Geophysicist
- Marcus Petros – Senior Geophysics technician
- Oris Kandeya – Geophysics technician

Actions:

- Line Preparations
- Magnetic Survey – 50km
- Follow-up method not yet decided – will be based on Haneti geophysics results and interpretation.
- Submission of Progress Report - Q1 2024

NB: The EM34* Survey will start as soon as customs releases the equipment. It should be noted that this has caused delays of about two weeks to date.

We are hopeful that the equipment will be received sooner rather than later to commence with the EM survey.

The * EM34-3 is a frequency-domain electromagnetic (FDEM) instrument that measures the electrical conductivity of the subsurface. It has a wide range of applications, including –



METMINEC (PTY) LTD
MINING THE FUTURE

- **Mapping soil salinity;** which is a measure of the amount of salt in the soil. Soil salinity can affect plant growth and crop yields.
- **Locating buried objects;** such as pipes, cables, and underground storage tanks.
- **Investigating subsurface geological structures;** such as faults and fractures. These structures can affect the flow of groundwater and the stability of the ground.

8. CONCLUSION

The team of professionals that METMINEC has assembled in Tanzania have all been onboarded, thoroughly briefed, and have clearly assigned responsibilities and deliverables to be achieved as per the relevant geological exploration stage activities that have been scheduled for completion against a rigorous roll-out plan that will be tightly controlled and managed.

The leadership team is confident that the planned work will be completed within the timeframes as specified (*provided all the required equipment is timeously released by Tanzanian Customs*).



METMINEC (PTY) LTD
MINING THE FUTURE

REFERENCES

CMD (Council for Mineral Development), 2022. Lithium Pegmatites in South Africa: An Investment Guide.

Kisamba, C. S., & Li, Z. (2023), Geological Setting and Mineralization of the Hombolo Lithium Project, Tanzania. Article published in AfricaGeo Journal.