Independent Technical Report for the Spring Stone Exploration Mpwapwa Copper Properties, Tanzania

Report Prepared for

Spring Stone Exploration Inc.

Report Prepared by

srk consulting

SRK Consulting (Canada) Inc.
2CS050.001
October 2015

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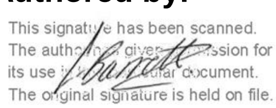

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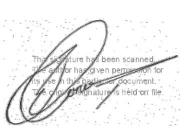

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Cover: General view of the Mpwapwa area, Tanzania

Important Notice

This report was prepared as a National Instrument 43-101 Technical Report for Spring Stone Exploration Inc. (“SSE”) by SRK Consulting (Canada) Inc. (“SRK”). The quality of information and conclusions contained herein is consistent with the level of effort involved in SRK’s services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by SSE subject to the terms and conditions of its contract with SRK and relevant securities legislation. The contract permits SSE to file this report as a Technical Report with Canadian securities regulatory authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party’s sole risk. The responsibility for this disclosure remains with SSE. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

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Executive Summary

Introduction

SRK Consulting (Canada) Inc. was appointed by Spring Stone Exploration Inc. to prepare an Independent Technical Report, compliant with the Canadian National Instrument 43-101 (NI 43-101) Standards of Disclosure, on its copper properties in Tanzania. It is understood that this report will be used to support an application for listing on the Canadian Securities Exchange (CSE).

Property Description and Ownership

Spring Stone Exploration Inc. has two properties, named Kimagai and Mlali. Both are located in the Mpwapwa District of the Dodoma Region in east-central Tanzania, approximately 300 km ENE of Dar es Salaam and 100 km ESE of Dodoma.

The Kimagai and Mlali properties encompass 9.10 and 29.04 sq. km respectively. Both were recently granted and are valid through to October 2019 and September 2019 respectively.

Both properties are granted to Spring Take Ltd., a wholly-owned, local (Tanzania-incorporated) subsidiary of Spring Stone Exploration Inc. Spring Stone Exploration Inc. has a joint venture agreement with the Japan, Oil, Gas and Metals National Corporation (“JOGMEC”), whereby JOGMEC has a 67% interest and SSE has a 33% interest with each party contributing their interest for the operation of the local entity.

Geology and Mineralisation

Regionally, the properties occur within the Neoproterozoic Mozambique Belt and include amphibolite- to granulite-facies orthogneisses, amphibolites and paragneisses.

Locally, the properties include a variety of gneisses (biotite, hornblende-diopside and migmatitic), amphibolite and lesser amounts of quartzite and meta-calcareous units. Common accessory minerals include garnet and kyanite.

The Mpwapwa area is associated with numerous copper occurrences, some of which are being actively exploited by small-scale operators.

The Kimagai property includes a historical copper occurrence that was reportedly associated with samples containing approximately 20% Cu. Although this occurrence has not yet been confirmed in the field, mineralisation has been observed elsewhere in the property. This includes a large, locally-derived boulder consisting of altered and brecciated amphibolite containing copper oxides. A contemporary sample returned 0.51% Cu, 0.33 g/t Au and 5.1 g/t Ag.

The Mlali property also includes a historical copper occurrence described as an inactive prospect or mine. A cursory field visit, completed by SRK as part of this project, confirmed the presence of four individual excavations within pyroxene amphibolite.

The types of deposit being targeted are Iron Oxide Copper Gold (IOCG) and intrusive-hosted copper, nickel and platinum group elements.

Exploration Status

The presence of copper in the Mpwapwa area was first documented during German colonial times. A limited amount of exploration occurred thereafter, but diminished in response to World War I and the Great Depression. Subsequent work appears to have been erratic and poorly documented. As a result, the Mpwapwa area is considered to be very under-explored.

The properties represent earlier-stage exploration projects. Both were selected on the basis of a preliminary data compilation and interpretation that focused on the use of satellite imagery. The Kimagai property has been subject to some field-based exploration, including geological observations, soil and rock-chip sampling. The Mlali property has not yet been subject to any field-based activities.

Mineral Resource and Mineral Reserve Estimates

As far as is known, no historical or contemporary mineral resource or mineral reserve estimates have been calculated for the Kimagai or Mlali properties.

Conclusion and Recommendations

Substantial copper mineralisation has yet to be confirmed in the properties. However, contemporary exploration activities are in their infancy. Despite their earlier-stage nature, the properties are associated with several merits, including: Tanzania having a favourable Mining Act and representing a mining-friendly jurisdiction; The two project stakeholders (Spring Stone Exploration Inc. and JOGMEC) having good exploration experience, particularly in Africa; The properties occur within a recognised copper district that is associated with an increasing amount of small-scale and artisanal copper production. Production is seemingly sufficient enough that several processing facilities are being constructed in the area; High-grade copper values have been reported in the area; The area is under-explored; The properties include historical copper occurrences; The properties are in proximity to some favourable infrastructure (the railway line to/from Dar es Salaam); and the amenability of the area to exploration (no major climatic impact, thin regolith / good bedrock exposure, not intensely vegetated, undeveloped, etc.).

Whilst the current ground-holding is quite small, it is understood that Spring Stone Exploration are intending to apply for additional properties in the Mpwapwa area.

The current properties are considered to have sufficient technical merit to justify the completion of further exploration.

It is recommended that further activities are systematically completed using best practice and observation-substantiated techniques. Recommended activities include a district-scale geological interpretation (to improve the understanding of the controls on mineralisation and to facilitate the acquisition of additional ground), soil sampling, bedrock sampling, petrographic analysis, pitting and trenching (and related sampling). If the results are sufficiently positive, drilling may be justified.

Table of Contents

List of Tables

List of Figures

1 Introduction and Terms of Reference

The Mpwapwa properties represent earlier-stage exploration projects for copper. They are located in the Dodoma Region in east-central Tanzania, approximately 300 km ENE of Dar es Salaam and 100 km ESE of Dodoma.

Spring Stone Exploration Inc. ("SSE") was granted Prospecting Licenses on the properties by the Ministry of Energy and Minerals in the United Republic of Tanzania, through a wholly-owned local subsidiary called Spring Take Ltd. ("STL"). SSE has a joint venture agreement with the Japan, Oil, Gas and Metals National Corporation ("JOGMEC"), whereby JOGMEC has a 67% interest and SSE has a 33% interest.

JOGMEC is a government organization established under administration of the Japanese Ministry of Economy, Trade and Industry, and is responsible for fostering international exploration and development of strategic minerals, amongst other mineral and petroleum related activities.

In August 2015, SSE commissioned SRK Consulting (Canada) Inc. ("SRK") to visit the property and prepare a technical report for the Mpwapwa properties. The services were rendered between September and October, 2015.

SRK understands that this technical report will be used by SSE and it affiliates to support an application for listing on the Canadian Securities Exchange (CSE).

This technical report was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1, and summarises the technical information available on the Mpwapwa properties.

1.1 Scope of Work

The scope of work, as defined in a letter of engagement executed on August 31, 2015 between SSE and SRK, included visiting the Mpwapwa copper properties and preparing a technical report in accordance with the Canadian Securities Administrators' NI 43-101 and Form 43-101F1. This involved consideration of the following items:

- Property location, accessibility, climate, local resources, infrastructure and physiography
- Exploration history
- Geological setting and mineralisation
- Contemporary exploration
- Sample preparation, analysis and security
- Data verification
- Mineral processing and metallurgical testing
- Mineral resource estimate
- Adjacent properties
- Interpretation and conclusions
- Recommendations

Items not included in the report comprise Mineral Reserve Estimates, Mining Methods, Recovery Methods, Project Infrastructure, Market Studies and Contracts, Environmental Studies, Permitting, and Social or Community Impact, Capital and Operating Costs and Economic Analysis. As stipulated in Form 43-101FI, these items have been omitted because the projects are insufficiently advanced.

1.2 Basis of Technical Report

The information contained in this technical report was derived from multiple sources, including but not limited to:

- Spring Stone Exploration
- JOGMEC
- The Geological Survey of Tanzania
- The United Republic of Tanzania Ministry of Energy and Minerals
- Verbal communications with the project stakeholders
- The Internet
- Primary observations in and around the properties
- Review of the acquired data

Where used, the data sources have been cited in the text and are fully referenced in the References and Bibliography section.

Unless indicated otherwise, all of the coordinates stated in this report are in Universal Transverse Mercator (UTM) projection (Zone 37S) and the 1984 World Geodetic System datum (WGS84).

1.3 Qualifications of SRK and SRK Team

As fully independent, specialised exploration and mining consultants, SRK has successfully guided numerous clients through all stages of project development, from grassroots exploration to definitive feasibility studies, as well as optimisation of existing operations. SRK's global experience and reputation for excellence is widely recognised among the major financial institutions and we are repeatedly called upon to advise on and evaluate projects for all types of market transactions.

Among SRK's 1,500 clients are most of the world's major and medium-sized metal and industrial mineral mining houses, exploration companies, banks, petroleum exploration companies, agribusiness companies, construction firms, and government departments.

SRK strives to meet and exceed our clients' needs by providing services tailored specifically to the requirements of each assignment. Our ability to draw upon the unique expertise of our 1,500+ professionals operating from 44 offices on 6 continents make us highly flexible in our capacity to provide focused advice and problem solving.

This report was written by Mr. Chris Barrett, Principal Exploration Geologist and Chartered Geologist (CGeol) with the Geological Society of London, registration number 1003738. This report was reviewed by Dr. Wayne Barnett, Principal Structural Geologist and Professional Natural Scientist (Pr.Sci.Nat) with the South African Council for Natural Scientific Professions, registration number 400237/04. SRK reviewed drafts of this technical report prior to their delivery to SSE as per SRK internal quality management procedures. Dr. Barnett did not visit the Mpwapwa properties.

By virtue of their education, membership to recognised professional associations and relevant work experience, Mr. Barrett and Dr. Barnett are independent Qualified Persons as defined by National Instrument 43-101.

1.4 Field Visit

SRK visited the Mpwapwa properties between September 29 and October 02, 2015. The field visit was completed by Mr. Chris Barrett (Principal Exploration Geologist, SRK) who was accompanied by Mr. Masota Mathew Magigita (Senior Geologist, Geological Survey of Tanzania), and Mr. Kulwa Mkalimoto (Chairman, Dodoma Regional Miners Association). In-country logistical support was provided by Japan Tanzania Tours based in Dar es Salaam.

The fundamental purpose of the field visit was to fulfil the NI 43-101 requirements. It enabled the observation of the properties, their geological characteristics, artisanal mining activity and the acquisition of additional technical data from the Geological Survey of Tanzania.

1.5 Acknowledgements

SRK would like to acknowledge the support and collaboration provided by Spring Stone Exploration (particularly Mrs. Akiko Levinson), JOGMEC (particularly Dr. Tetsuichi Takeda), the Geological Survey of Tanzania (particularly Mr. Masota Mathew Magigita), the Dodoma Regional Miners Association, Japan Tanzania Tours, and ALS Chemex (Vancouver) for this project. Their contribution was greatly appreciated and instrumental to the completion of this technical report.

1.6 Declaration

SRK's opinion contained herein and effective October 30, 2015 is based on data provided to SRK and that collected by SRK throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

This report may include technical information that requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material.

SRK is not an insider, associate or an affiliate of Spring Stone Exploration Inc., and neither SRK nor any affiliate has acted as advisor to Spring Stone Exploration Inc., its subsidiaries or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

SRK has not performed an independent verification of land title and tenure information as summarised in Section 3 of this report. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties.

SRK was informed by Spring Stone Exploration Inc. that there are no known litigations affecting the Mpwapwa properties.

2 Reliance on Other Experts

SRK has not relied upon any Other Experts for the purposes of this report.

3 Property Description and Location

Spring Stone Exploration Inc. has two properties, named Kimagai and Mlali. Both occur in Mpwapwa District of the Dodoma Region in east-central Tanzania (Figure 3-1). They are located approximately 300 km ENE of Dar es Salaam and 100 km ESE of Dodoma, Tanzania's national capital. The distance between the two properties is around 25 km.

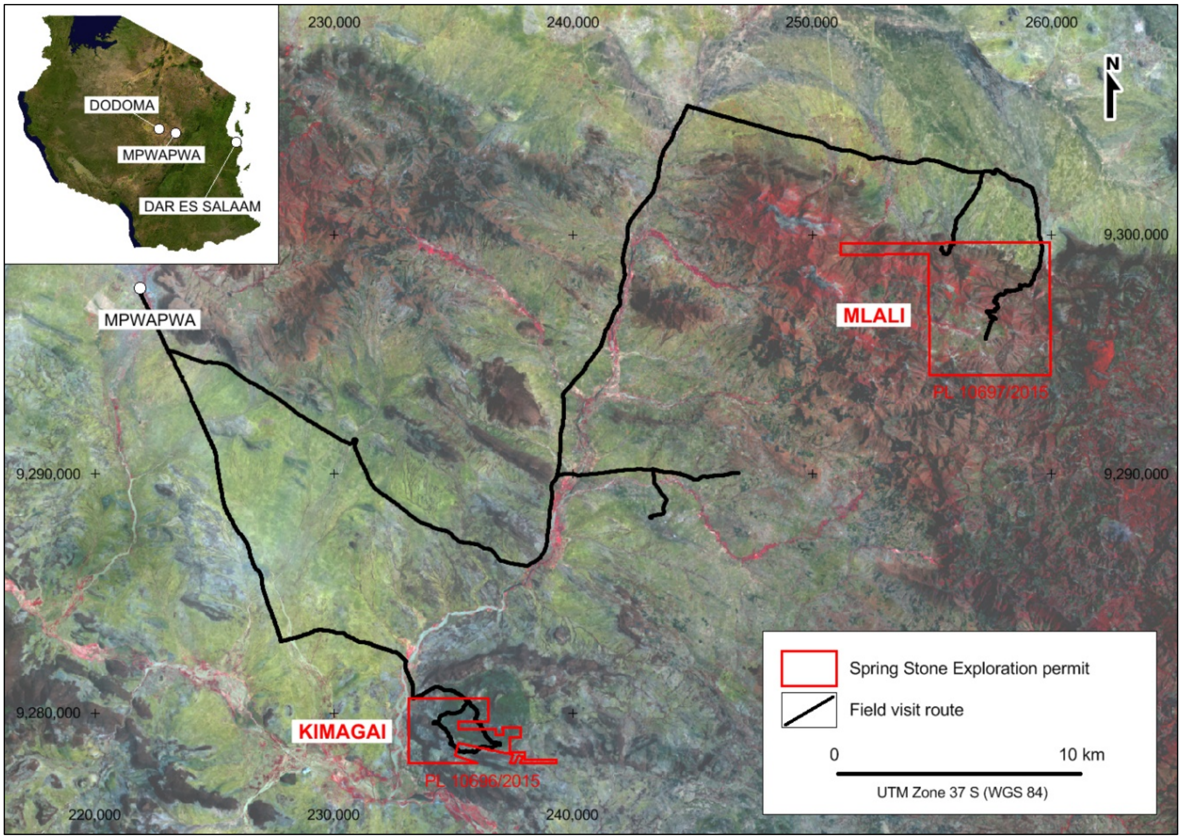

Figure 3-1: The location of the Mpwapwa properties.

Locally, the Kimagai property is located approximately 20 km SE of the town of Mpwapwa. The UTM Zone 37S (WGS84) coordinates of the centroid of the property are 236,200 (X) and 9,279,250 (Y).

The Kimagai property encompasses an area of 9.10 sq. km and consists of a single permit (number 10697/2015).

According to a scanned copy of the permit documentation provided by SSE, permit 10697/2015 is a Prospecting Licence - Metallic Minerals, to prospect for gold and granted pursuant to Section 32 of the Mining Act, 2010 (MEM, 2015a). The permit was granted on 06 October, 2015 for a period of 48 months (expiring 05 October, 2019).

The Mlali property is located approximately 35 km due east of the town of Mpwapwa. The UTM Zone 37S (WGS84) coordinates of the centroid of the property are 255,570 (X) and 9,296,890 (Y).

The Mlali property encompasses a total area of 29.04 sq. km and consists of a single permit (number 10697/2015). According to a scanned copy of the permit documentation provided by SSE, permit 10697/2015 is a Prospecting Licence - Metallic Minerals, to prospect for gold and granted pursuant to Section 32 of the Mining Act, 2010 (MEM, 2015b). The permit was granted on 18 September, 2015 for a period of 48 months (expiring 17 September, 2019).

The properties have not been legally surveyed. The extents shown in the figures in this report were provided by Spring Stone Exploration and checked against the official permit documentation.

Both properties are granted to Spring Take Ltd., a wholly-owned, local (Tanzania-incorporated) subsidiary of Spring Stone Exploration Inc.

The mineral tenure information is summarised in Table 3-1.

Table 3-1: Mineral tenure information.

Name	Number	Type	Granted to	Commodities	Grant date	Expiry date	Area (sq. km)
Kimagai	10696/2015	Prospecting Licence	Spring Take Ltd	Metallic Minerals	06-Oct-15	05-Oct-19	9.10 *
Mlali	10697/2015	Prospecting Licence	Spring Take Ltd	Metallic Minerals	18-Sep-15	17-Sep-19	29.04
						TOTAL:	**38.14**

* The observed documentation states that the Prospecting Licences have been granted for Metallic Minerals and to prospect for gold. However, the Mining Act (URT, 2010) defines Metallic Minerals as a group of minerals comprising of gold, silver, copper, iron, nickel, cobalt, tin, tungsten, zinc, chromium, manganese, titanium, aluminium, platinum group of metals and other metallic minerals. Spring Stone Exploration clarified the inclusion of copper with their legal representation, ENSafrica, and has arranged to obtain updated documents that explicitly state copper.

** Spring Stone Exploration has a joint venture agreement agreed with the Japan Oil, Gas and Metals National Corp, more comprehensive details of which are provided in Section 3.1. As part of the agreement, a portion of the area granted under Prospecting Licence No. 10696/2015 is excluded from the joint venture. Accordingly, this part of the property is not covered by this technical report.

SRK is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Mpwapwa properties.

It is understood that Spring Stone Exploration are intending to apply for additional properties in the Mpwapwa area. However, for confidentiality reasons these are not included in this report.

3.1 Underlying Agreements

It is understood that Spring Stone Exploration Inc. ("SSE"), a company incorporated under the laws of the Province of British Columbia, Canada with an office address at Suite 810 - 609 Granville Street, Vancouver, British Columbia, Canada, V7Y 1G5, has entered into a joint venture agreement with the Japan Oil, Gas and Metals National Corp. ("JOGMEC"), a company incorporated under the laws of the Japan with an office address at 10-1 Toranomon, 2 Chome, Minato-ku, Tokyo, 105-0001 Japan, effective October 09, 2015, whereby SSE has a 33% interest and JOGMEC has a 67% interest.

Under the terms of the agreement, each party contributes their interest for the operation of the local entity. The agreement provides for an operating committee consisting of up to four members, two appointed from each partner. SSE, through its wholly-owned subsidiary, Spring Take Ltd. ("STL"), acts as the operator of the JV and carries out the mandate of the operating committee.

3.2 Permits and Authorisations

As far as is known, no additional permits beyond the granted Prospecting Licences are required in order to complete the recommended exploration activities described in Section 17.

3.3 Environmental Considerations

Exploration and mining activities are subject to the provisions of the Mining Act, 2010 and the Environmental Management Act, 2004 and the applicable regulations made respectively there under.

Based upon a cursory review of the Mining Act, environmental certificates are only stipulated as being required for mining projects, more specifically, Mining Licences and Special Mining Licences (definitions of which are provided in the subsequent Section).

Given their earlier-stage nature, there are no known mining-related environmental liabilities associated with the Mpwapwa properties.

3.4 Mineral Rights

In Tanzania, mineral rights are currently governed by the Mining Act, 2010 and licences are issued and managed by the Ministry of Energy and Minerals based in Dar es Salaam.

The different types of licence that can be granted under the Mining Act are summarised as follows. It should be noted that this is not a comprehensive description and the Mining Act should be consulted for a complete account (URT, 2010).

- **Prospecting Licence**
  A Prospecting Licence confers on the holder the exclusive right to carry on prospecting operations in the prospecting area for minerals to which the licence applies. This type of licence is initially issued for a period of up to 4 years. It can be renewed for a period of up to 3 years, and a second renewal is also permitted for a period of up to 2 years. Beyond the second renewal, the licence holder is required to complete a feasibility study. Each renewal has to involve the relinquishment of at least 50% of the property. Annual rent is currently US$ 100 per sq. km for the initial period, US$ 150 per sq. km during the first renewal and US$ 200 per sq. km for the second renewal.

  An individual licence is allowed to be up to 300 sq. km and a licence holder is allowed up to 20 valid prospecting licences amounting to a total of 2,000 sq. km. This type of licence allows the holder to establish camps and temporary buildings within the prospecting area. The permit holder is required to commence prospecting operations with a period of 3 months (or such further period as the licencing authority may allow) from the date the licence was granted, adhere to the prospecting programme appended to the prospecting licence, and give notice to the licencing authority of the discovery of any mineral deposit of potential commercial value.

- **Gemstone Prospecting Licence**
  A Gemstone Prospecting Licence is similar to a standard prospecting licence, but is only issued for 1 year and is not eligible for renewal (unless it was issued for kimberlitic diamonds). Annual rent is currently US$ 100 per sq. km. An individual licence is allowed to be up to 5 sq. km.

- **Retention Licence**
  A Retention Licence can be applied for if the holder of a prospecting licence has identified a mineral deposit within the prospecting licence, or a mineral deposit cannot be developed immediately due to technical constraints, adverse market conditions or other economic factors of a temporary character. This type of licence has a validity of up to 5 years and is not renewable. Annual rent is currently US$ 2,000 per sq. km.

- **Mining Licence**
  A Mining Licence is reserved for medium-scale mining operations, whose capital investment is between US$ 100,000 and US$ 100,000,000, or its equivalent in Tanzanian shillings. It confers on the holder the exclusive right to carry on mining operations in the mining area for the stated minerals. This type of licence has a validity of up to 10 years and can be renewed.

  An individual licence is allowed to be up to 10 sq. km for metallic and energy minerals. The annual rent is currently US$ 3,000 per sq. km.

- **Special Mining Licence**
  A Special Mining Licence is reserved for large-scale mining operations, whose capital investment is not less than US$ 100,000,000, or its equivalent in Tanzanian shillings. It is granted for a period equal to the estimated life of the ore body as indicated in the feasibility study report, or such period as the applicant may request, whichever is shorter.

  An individual licence is allowed to be up to 70 sq. km for superficial mining and 35 sq. km for other deposits. The annual rent is currently US$ 5,000 per sq. km.

- **Primary Mining Licence**
  A Primary Mining Licence is reserved for small-scale mining operations whose capital investment is less than US$ 100,000, or its equivalent in Tanzanian shillings. This type of licence has a validity of up to 7 years and can be renewed for a further 7 years. An individual licence is allowed to be up to 10 hectares for most minerals. The annual rent is currently 40,000 Tanzanian schillings per Ha.

- **Processing Licence**
  This type of licence has a validity of up to 10 years.

- **Smelting or Refining Licence**
  A Smelting or Refining Licence is required to smelt or refine minerals and is subject to a variety of requirements including an environmental management plan, a smelter or refinery plant layout, a waste disposal management plan, etc. They have a validity of up to 25 years.

Other aspects of the Mining Act that are considered to be pertinent are described as follows.

Regarding royalties - According to the Mining Act, "*Every authorised miner shall pay to the Government of the United Republic a royalty on the gross value of minerals produced under his licence*" at the rate that varies depending on the type of produced minerals. In the case of uranium and diamond this equals 5%, for metallic minerals such as copper, gold, silver and platinum group minerals it is 4%, for other minerals, including building materials, industrial minerals and salt it is 3%, and for gems it is 1%.

Regarding free carried interests - The Mining Act also includes provision for the Government to acquire a free carried interest, stating that "*The level of free carried interest and State participation in* *any mining operations under a Special Mining Licence shall be negotiated upon between the Government and a mineral rights holder depending on the type of minerals and the level of investment*".

Regarding surface rights - A holder of a mineral right is permitted surface and access rights to land provided that such land does not fall within restricted areas which are specified under Section 95 of the Mining Act, in which case the written consent of the Minister is required. Restricted areas include any land set apart for any public purpose other than mining, land forming part of a licensed or Government aerodrome, any land on which there is military installation or within 100 m of the boundaries thereof, any reserved or protected area, etc.

All land in Tanzania is public property which is held by the President as trustee for the land on behalf of all citizens of Tanzania. As such, the land tenure system in Tanzania is leasehold whereby holders of rights occupancy have the right to occupy and to use such land. Similarly, holders of mineral rights have the right to exercise the rights contained in their licences/applications.

4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Access to and from the Mpwapwa properties is moderately easy. From Dar es Salaam, it is possible to take a short internal flight to Dodoma that takes approximately 1.5 hours. From Dodoma, vehicle access is via a tarred road east to Mgunga (a distance of around 60 km) where is it necessary to turn south on graded tracks to Mpwapwa (a distance of around 45 km), the nearest major population centre to the properties.

The driving time from Dodoma to Mpwapwa is approximately 2 hours. From Mpwapwa, graded and ungraded tracks enable access to the properties. The driving time from Mpwapwa to Kimagai is around 1 hour, and from Mpwapwa to Mlali is around 2 hours.

At the time of the field visit, the condition of the access tracks was good. However, during the wet season some sections could be difficult to pass, particularly where they cross rivers in the Kimagai property. A four-wheeled drive vehicle is required for access year round. It is possible to drive from Dar es Salaam to the Mpwapwa properties, a journey that takes approximately 7 to 8 hours along tarred roads and gravel tracks.

Accessibility within the properties is generally moderately easy. Although neither have an extensive tracks suitable for larger vehicles. All-Terrain Vehicles (ATV's) would generally work well, although in places the steeper slope gradients would necessitate walking.

The region in which the properties occur is characteristically dry, with an average annual precipitation of 712 mm (Weatherbase, 2015). Whilst Tanzania does have marked wet and dry seasons, the Dodoma area is reportedly associated with less climatic variation. That stated, it is typically wetter throughout the country between December and April.

Temperatures in the Mpwapwa area are relatively consistent, ranging from 20 to 25 ^{o}C and averaging 23 ^{o}C (Weatherbase, 2015).

Aside from potential accessibility issues affecting the Kimagai property if the rivers are high, the climatic conditions are not anticipated to adversely affect exploration activities (i.e. field exploration activities could occur throughout the year).

The properties are largely undeveloped. The Kimagai property does not appear to include any permanent settlements and Mlali includes a small village called Mbagilwa.

The nearest paved highway (B129) that connects Dodoma to Morogoro occurs between 30 and 50 km north of the property. The nearest railway line occurs within 1.25 km of the southern edge of the Kimagai property. The railway line links Dar es Salaam to Dodoma and beyond. The nearest port is Dar es Salaam, located approximately 300 km to the east. The nearest international airport is in Dar es Salaam. The nearest domestic airport is in Dodoma, located approximately 120 km to the west. It is not known if there are any smaller airstrips in the vicinity of the properties.

Mpwapwa has a small district hospital and the nearest major hospital is in Dodoma. Fuel, basic food supplies and accommodation is available in Mpwapwa. Due to the largely undeveloped nature of the properties they lack a significant power supply. Because of the elevated and rugged nature of the terrain in the Mpwapwa area, the majority of the streams and rivers are ephemeral and only contain water in the wetter season. The properties have terrestrial cell phone coverage.

The physiography of the Mpwapwa properties is characterised by moderately rugged terrain. In the Kimagai property, the terrain ranges in elevation from 760 to 1,110 m above sea level. In the Mlali property, the terrain ranges in elevation from 1,430 to 2,080 m above sea level.

The vegetation in the property is dominated by savannah-type grasses, bushes and trees, the latter of which are more concentrated nearer to the drainage channels.

The land-use in the property predominantly consists of undeveloped ground.

General views of the Kimagai and Mlali properties are provided in Figures 4-1 and 4-2 respectively.

Figure 4-1: General view of the Kimagai property.

Figure 4-2: General view of the Mlali property.

5 History

Regionally, the presence of copper in the Mpwapwa area was first documented during German colonial times. Subsequent work reportedly included prospecting, soil sampling, rock sampling, pitting, trenching and drilling, but specific details are lacking (GST, 2015a).

The explorers at the time reportedly focussed on small high-grade occurrences, but activities diminished in response to World War I and then the Great Depression (Rees Williams, 1953).

As a result of this work, a sufficient number of copper occurrences had been identified to delineate an area some 30 km in width and 120 km in length, extending from Mautia Hill north of Kongwa to the plateau of Mangalissa Mountain to the south.

In the early 1950s, what was then known as the Geological Survey of Tanganyika Territory completed some reconnaissance work to examine as many of the occurrences as possible. The apparent motivation for this initiative was an increase in the copper price and reports of artisanal copper production in the Mpwapwa area. Interestingly, the Geological Survey prohibited prospecting in the area in 1952. Activities included geological observations, grab sampling, specimen collection, pitting, trenching and drilling. However, by 1954 the initiative ceased because development of the occurrences was thought to be beyond the function of the Geological Survey, and interest had been shown by private parties (Bisset, 1954).

Locally, the prior ownership of the properties, if any, is unknown. Therefore the type, amount, quantity, and general results of exploration and development work undertaken by any previous owners or operators is also unknown.

6 Geological Setting and Mineralisation

6.1 Regional Geology

The Precambrian geology of Tanzania can be subdivided into five lithostratigraphic and tectonic units on the basis of their chronology (GST, 2015a), as shown in Figure 6-1:

- Meso- to Neoarchaean Tanzania Craton, that forms the core of Tanzania
- Palaeoproterozoic mobile belts of Ubendian and Usagaran, that border the Tanzania Craton on its west-southwest and southeast margins
- Mesoproterozoic Karagwe-Ankolean Belt, to the west of the Tanzania Craton
- Neoproterozoic Mozambique Belt, that borders the Tanzania Craton to the east and is part of the East African Orogen
- Neoproterozoic Malagarasi Supergroup, to the west of the Tanzania Craton

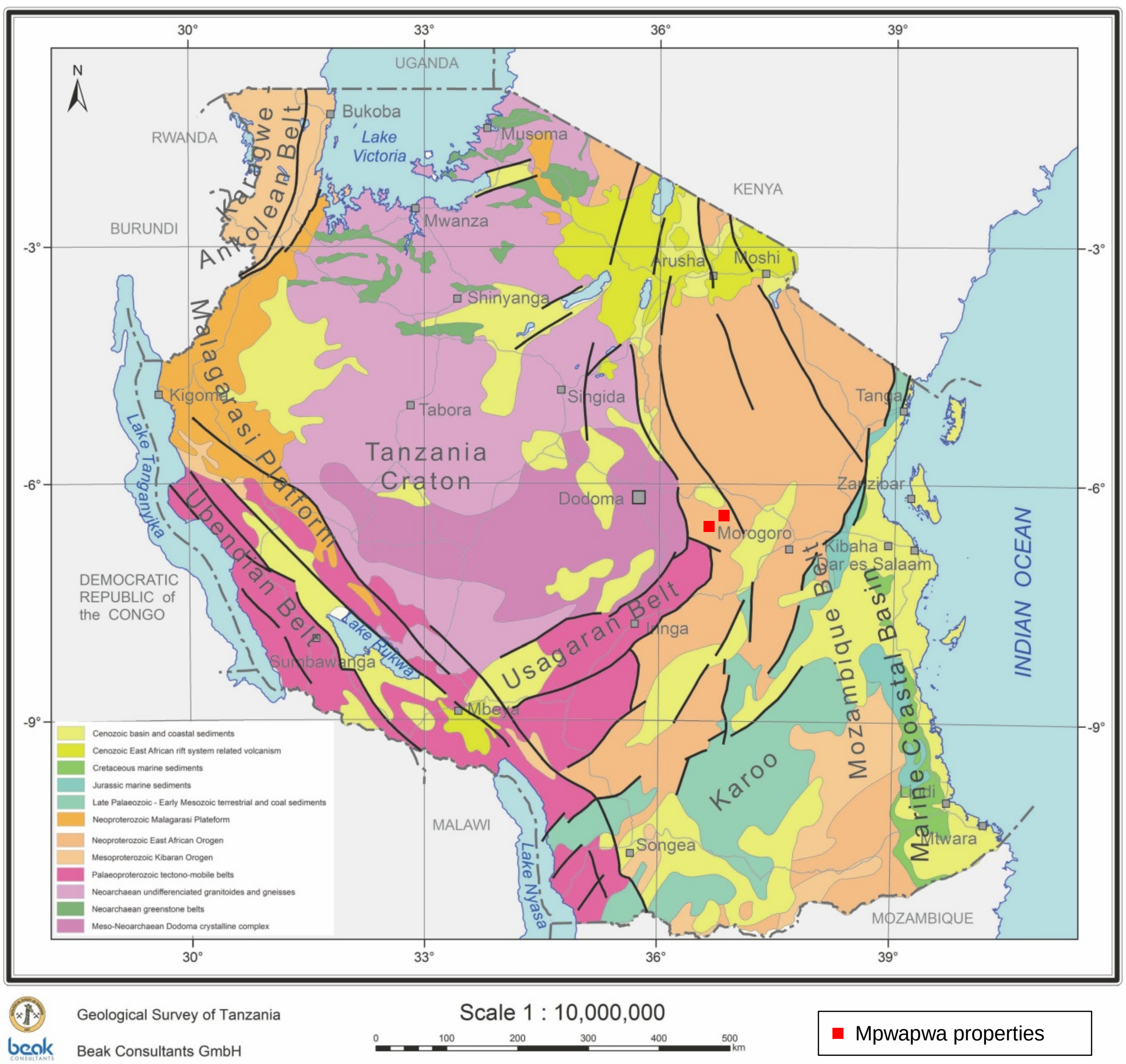

Figure 6-1: Regional geological setting of Tanzania (after GST, 2015a).

Unless cited otherwise, the following descriptions were extracted and summarised from GST (2015).

The Meso- to Neoarchaean Tanzania Craton extends from central Tanzania to western Kenya and southeast Uganda, and forms the core of the oldest continental crust in East Africa (GST, 2015a).

Subdivision of the Craton has been completed on the basis of geological and geophysical data, resulting in two principal superterranes: the Central and the Northern Tanzania Craton.

The Central Tanzania Craton (also known as the Dodoma Supergroup) comprises migmatitic gneisses of mainly sedimentary origin and granitoid belts with intercalated greenschist- to amphibolite-facies greenstone and schist belts. The maximum age of sedimentation of the meta-sedimentary units is indicated by zircon U-Pb ages of 3,604 Ma from fuchsitic quartzites. At around 2,850 to 2,660 Ma, the sedimentary rocks were intruded by granitoids and covered by volcanic rocks. Subsequently, the rocks were overprinted by greenschist to amphibolite-facies metamorphism. Various granitoids and gneisses occur in the intervening area between the Dodoman Belt of central Tanzania and the low-grade metamorphic granite-greenstone terranes of northern Tanzania.

The Northern Tanzania Craton includes greenstone belts consisting of E-W trending meta-sedimentary and mafic to felsic meta-volcanic rocks.

Archean rock units are also incorporated into the surrounding Proterozoic mobile belts. These units were separated from cratonic areas, thermally reworked and sutured to the Tanzania Craton during Proterozoic orogenic and tectonic events.

The Palaeoproterozoic Ubendian Belt is a SE-NW trending orogenic structure flanking the western and southwestern margins of the Tanzania Craton. The belt is approximately 500 km long and 150 km wide, extending from Malawi through Tanzania to the Democratic Republic of the Congo. The belt is interpreted to be the result of the collision between the Archaean cratons of Tanzania and Congo at around 2,100 to 2,025 Ma.

The Ubendian Belt has been subdivide into eight litho-tectonic terranes and includes meta-basites, aluminosilicate schists, biotite gneisses,gneissic granite, metabasic granulites, quartzites, meta-volcanics, meta-anorthosite and cordierite gneisses. The terrane boundaries are characterised by mylonites and blastomylonites that were affected by amphibolite- to greenschist-facies metamorphism.

The Palaeoproterozoic Usagaran Belt forms a large metamorphic domain adjacent to the Tanzania Craton that trends SW-NE to E-W. The Belt is subdivided into two major tectono-metamorphic units. The older (2,000 Ma) and higher metamorphic grade unit consists of highly metamorphosed and deformed leucocratic paragneisses and mafic amphibolites which are dominated by amphibolite and locally granulite and eclogite-facies mineral assemblages.

The younger (1,920 Ma) and lower metamorphic grade Belt unconformably overlies the Tanzania Craton and is composed of low-grade (greenschist to lower amphibolite-facies) meta-volcanic and meta-sedimentary rocks.

The Mesoproterozoic Karagwe-Ankolean Belt occurs to the west of the Tanzania Craton and extends into Rwanda, Burundi, Uganda and the Democratic Republic of Congo. The belt consists of mostly meta-sedimentary rocks and minor meta-volcanics that have been predominantly intruded by three different generations of ultramafic to felsic plutonic massifs.

Regionally, the Mpwapwa properties occur within the Neoproterozoic Mozambique Belt. The Belt represents part of a composite Proterozoic orogen that extends from northeastern Africa (i.e. the Arabian-Nubian Shield) through East Africa and southern Mozambique, and south into Antarctica.

The East African Orogen (also known as the Pan-African orogen) is interpreted to be a major Neoproterozoic suture that resulted from the collision between East and West Gondwana to form the supercontinent.

In the north, the Arabian–Nubian Shield is dominated by low to medium-grade Neoproterozoic, upper crustal, juvenile rocks, including remnant ophiolites and island arcs that are interpreted as being a melange of accreted terranes.

Further south, in Kenya, Tanzania, Malawi and Mozambique, the metamorphic grade increases while juvenile material decreases and there is predominant re-working of older crustal rocks.

In the Tanzanian section of the Mozambique Belt, regional granulite-facies terranes are ubiquitous and most of them have been interpreted as nappes.

In Tanzania, the Mozambique Belt is subdivided into the Western Granulite Domain and the Eastern Granulite Domain, which are separated by flat thrusts and younger sedimentary basins (Figure 6-2). The Mpwapwa properties occur within the Western Granulite Domain (WG) that according to the accompanying cross-sections, is thrust over the Tanzania Craton and the Usagaran Belt.

The western and central portions of the Mozambique Belt are dominated by upper amphibolite-facies orthogneisses, amphibolites and paragneisses. In the eastern portion, quartzite, pelite and marble are prevalent.

Granulites within the Western Granulite Domain occur as small enclaves within the granitoids of the cratonic margin, east and southeast of Dodoma. The western granulites are suggested to represent the Neoproterozoic reworked older cratonic crust, a model that is supported by metamorphic ages of 640 to 620 Ma and the existence of inherited xenocrysts with magmatic and metamorphic ages clustering at 2,300 to 2,700 and 1,800 Ma. Charnokitic and biotite gneisses reveal clockwise P-T-paths followed by isobaric cooling to 800 to 850 °C at 12 to 14 kbar.

The Eastern Granulite Domain includes the up to 900 km long, NS trending, semi-continuous belt of high pressure granulite-facies rocks. Rock units include granulites, marbles, quartzites, schists, kyanite- and graphite-bearing gneisses as well as abundant gemstone bearing pegmatites and post-orogenic granites.

Nd crustal residence ages of 1,100 and 1,000 Ma indicate that the granulites in the Eastern Granulite Domain do not represent reworked Archaean crust. The rocks underwent P-T conditions of 9.5 to 11.0 kbar and 810 °C and the anticlockwise P-T-t path is attributed to magmatic underplating that occurred prior to collisional events. Peak metamorphism occurred at ~640 Ma followed by subsequent cooling between 480 to 540 Ma.

The Neoproterozoic Malagarasi Supergroup represents weakly deformed and un-metamorphosed sedimentary and volcanic rocks that are deposited in isolated basins at the western border of the Tanzania Craton. The Supergroup includes shales, siltstones, sandstones, arkoses, ortho-quartzites, and dolomitic limestones with cherts.

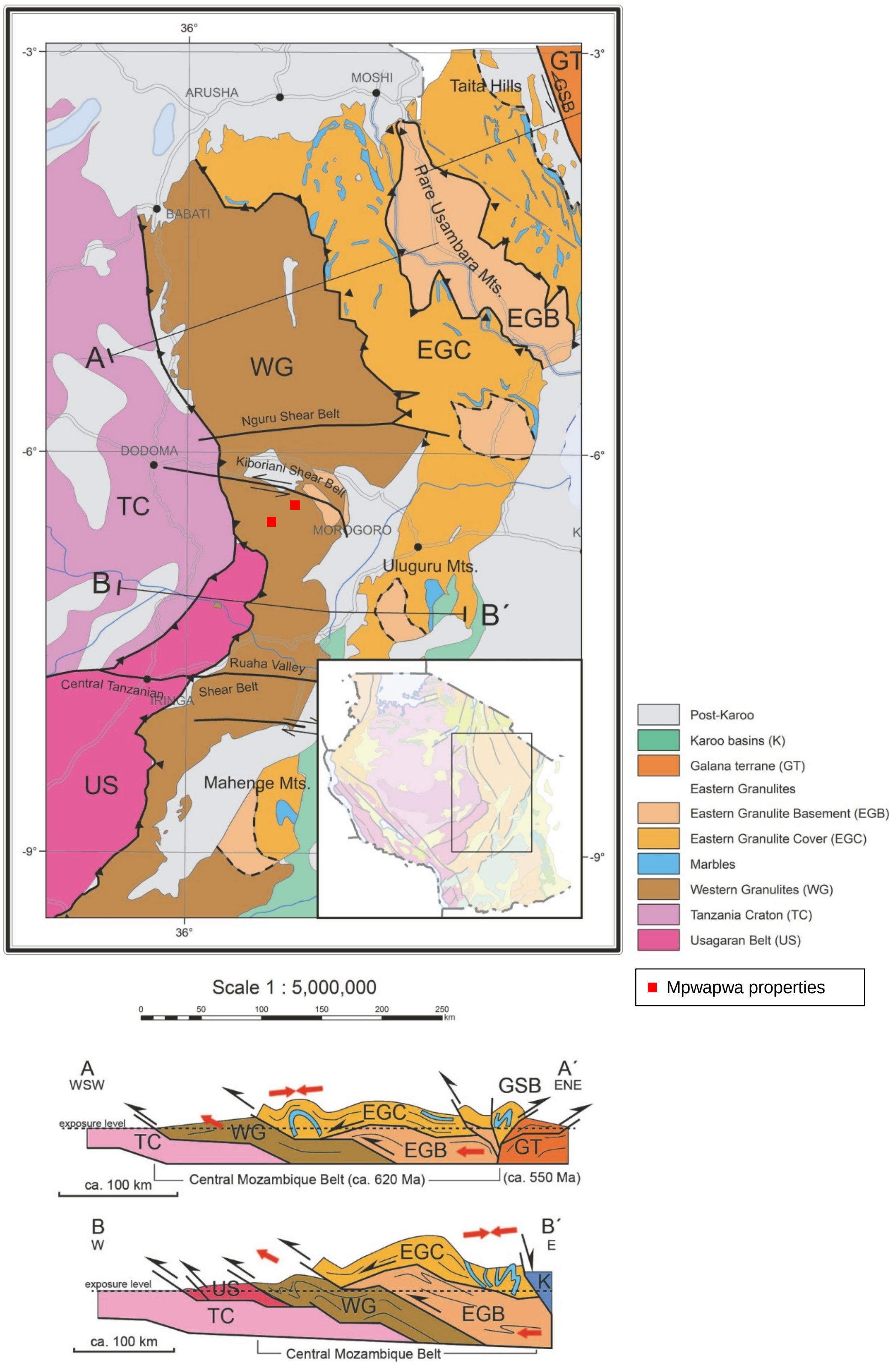

Figure 6-2: Geological setting of the Mozambique Belt in Tanzania (after GST, 2015a).

During the Phanerozoic, post the Late Palaeozoic, the Proterozoic belts were affected by brittle tectonics and magmatism.

In response to intra-continental extension, several rift systems developed and resulted in the formation of several intra-cratonic basins and post-Gondwana continental margins.

During the Permocarboniferous-Triassic (300 to 205 Ma), predominantly fluvial-deltaic (continental) sediments were deposited at relatively high sedimentation rates in rift valleys as siliciclastic and carbonate sediments of the Karoo Supergroup.

During the Mid Jurassic-Cretaceous (170 to ~90 Ma), the Proto-Indian ocean opened, oceanic crust was formed and predominantly marine sediments were deposited on top of the Karoo sequences and the Mozambique Belt. The coastal basins of Tanzania became a passive continental margin from Middle Jurassic onwards with full prevailing marine conditions with deposition of transgressive and regressive facies.

During the Cenozoic (~30 to 0 Ma), and in relation to the East African Rift System, continental sedimentary basins developed and were accompanied by volcanism. Passive continental margin sedimentation continues to the present day.

6.2 Local Geology

According to the Geological Survey of Tanzania 1:125,000-scale published geological mapping that encompasses the Mpwapwa properties (quarter degree sheet 53 SE (181) - Kilosa, published in 1959 and quarter degree sheet 53 NE (163) - Mlali, published in 1958), the area includes units assigned to the Usagaran Belt. This conflicts with the more recent mapping produced by the Geological Survey of Tanzania (GST, 2015a), as described in the previous section.

This inconsistency is attributed to the relative age difference between the different maps. Even though the units included in the older mapping may have been re-assigned to a different lithostratigraphic unit, the lithological and structural observations are still considered to be valid and are described as follows:

The dominant metasedimentary rock type in the Mpwapwa area is migmatitic biotite gneiss, consisting of quartz, oligoclase, microcline and biotite. Non-migmatitic biotite gneiss also occurs as remnants in the migmatite and lenses of garnet amphibolite or hornblende gneiss are common. Accessory garnet, kyanite and muscovite are observed in some localities.

The area also includes coarse-grained feldspathic quartzites that consist of quartz, oligoclase and microcline. The quartzites are reportedly frequently associated with meta-calcareous rocks and can contain biotite, hornblende, diopside or vermiculite.

Meta-calcareous units occur in the Mpwapwa area and are variable. The most common is described as hornblende-diopside gneiss, which is usually migmatitic. Impure crystalline dolomitic limestone is also found in some localities. They are characteristically pinkish in colour and contain dolomite, calcite, scapolite, hornblende, diopside, vermiculite and talc. Accessory minerals include sphene, tremolite, apatite and epidote.

Hornblende pyroxenite containing scapolite and quartz is also present and are often closely associated with the meta-calcareous units.

Meta-igneous units include garnet-pyroxene amphibolite and garnet-pyroxene granulite that occur throughout the Mpwapwa area.

Metagabbroic units occur in the area and are reportedly thought to have been emplaced later than the amphibolites because they appear to form separate bodies intruded into gneiss or amphibolite.

Metadolerite units have been observed to form the more resistant core of larger amphibolite units. They reportedly consist of ortho- and clinopyroxenes, biotite, andesine and hornblende.

Igneous rocks include potassic granite, gneissic potassic granite, and pegmatites.

Superficially, the area is associated with typically thin regolith cover consisting of what is described as red-brown earth, calcareous duricrust and alluvium.

Structurally, the Mpwapwa area includes a broad, complex anticlinal structure, the axis of which strikes southeast and follows the Kinyasungwe-Mkondoa Valley. Both of the Mpwapwa properties occur to the northwest of the fold axis. Locally, the area is characterised by complex folding.

6.3 Property Geology

According to the published geological mapping (GST, 1958 and 1959), the Kimagai property predominantly includes migmatitic biotite gneiss (Xx) and biotite gneiss, ± garnet and kyanite (Xe). Older, subordinate units include pyroxene amphibolite, ± garnet and meta-igneous (Xt) and hornblende-diopside gneiss and quartzite, sometimes meta-calcareous (Xcm).

Surficial units consist of alluvium occurring in the Matomondo-Kinyasungwe drainage channel.

Structurally, foliation typically strikes SE-NW and dips to the NE at between 30 to 70 degrees. However, units appear to arc around from the SE-NW to N-S to NE-SW.

This arcing, circular feature was also identified by JOGMEC as part of their Landsat satellite imagery interpretation. The imagery clearly shows a dark green 3 to 4 km diameter circular feature (Figure 6-7). Based upon subsequent field observations, the feature mainly consists of garnet amphibolite and amphibolite schist that are intercalated with minor quartz-feldspar schist and gneiss. The overlying regolith consists of reddish-brown to purplish-coloured iron-rich soil.

The GST (1958 and 1959) mapping was digitised and is reproduced in Figure 6-3.

According to the published geological mapping (GST, 1958), the Mlali property includes (from oldest to youngest), pyroxene amphibolite ± garnet (Xt), hornblende-diopside limestone and gneiss (Xcs), hornblende-diopside gneiss and quartzite (meta-calcareous) (Xcm), quartzite (Xq), biotite gneiss ± garnet and kyanite (Xeb), migmatitic biotite gneiss (Xx), and gneissic hornblende syenite (XiX).

Surficial units occurring within the Mlali property include what is described as Neogene red-brown earth (Nz) and alluvium.

Structurally, the setting is complex. Foliation measurements are highly variable, with dips ranging from 20 to 90 degrees, as shown in Figure 6-4. A photograph of a typical biotite gneiss outcrop within the Mlali property is shown in Figure 6-5.

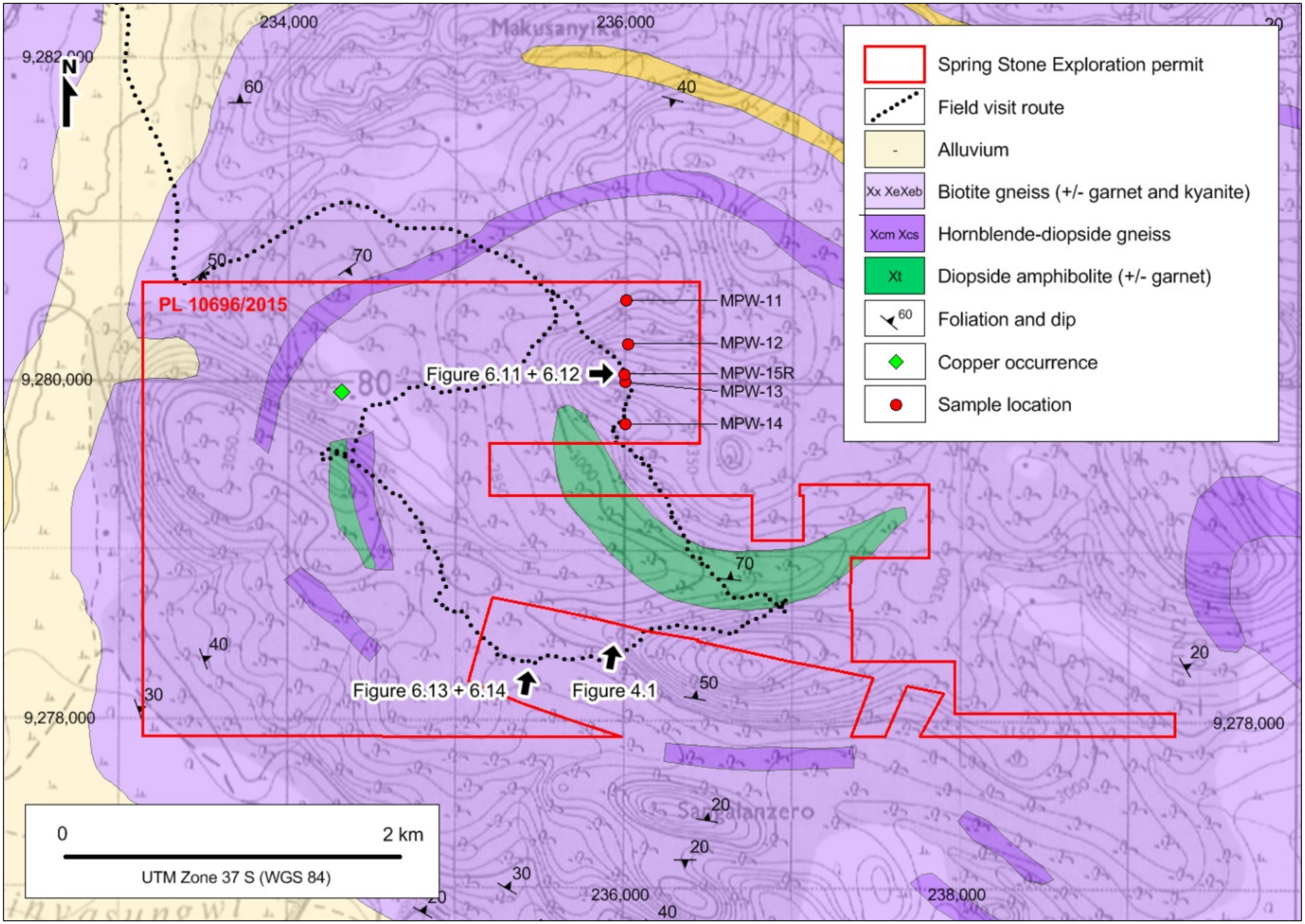

Figure 6-3: The geological setting of the Kimagai property (after GST, 1958 & 1959).

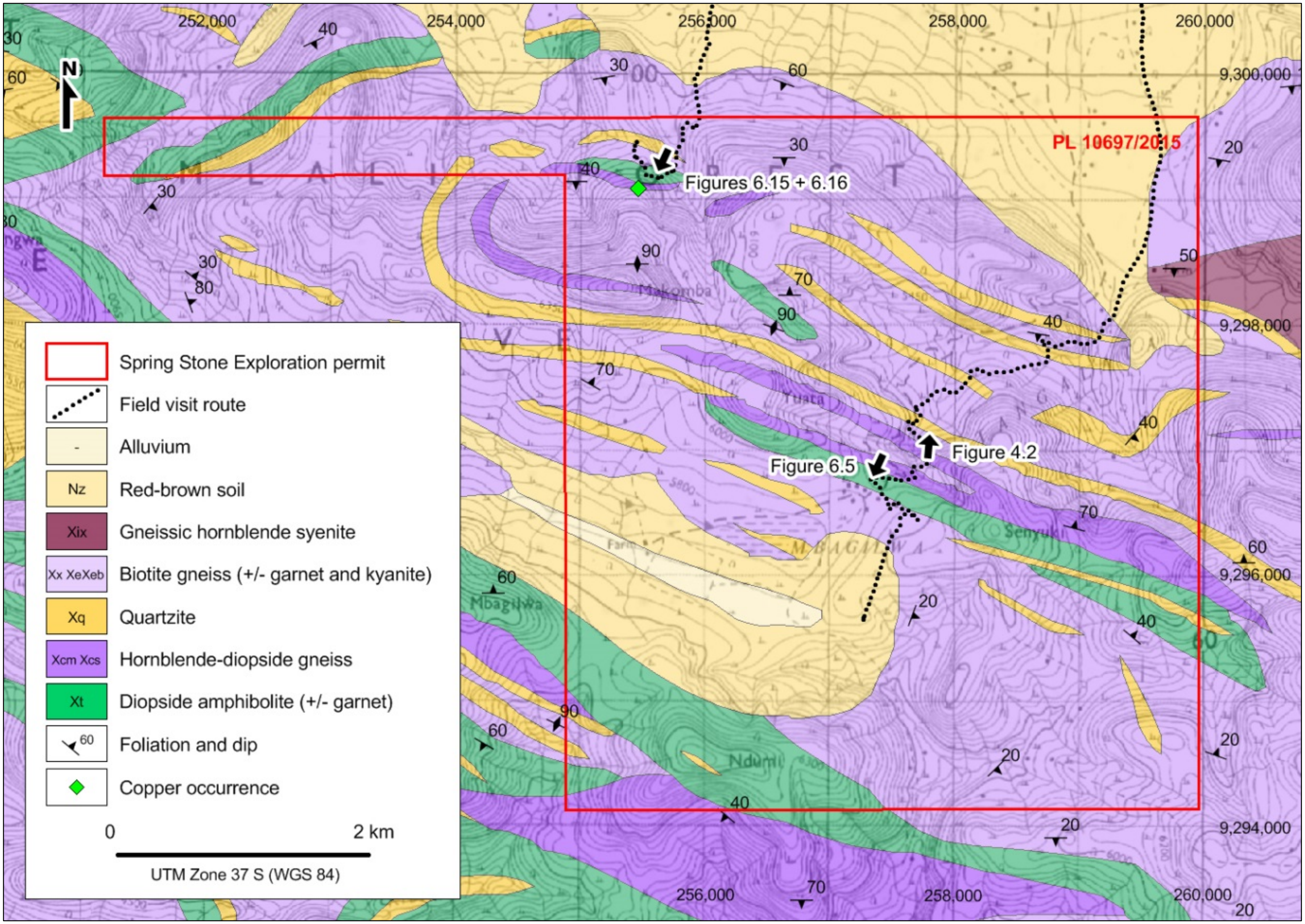

Figure 6-4: The geological setting of the Mlali property (after GST, 1958).

Figure 6-5: Biotite gneiss outcrop in the Mlali property.

6.4 Mineralisation

Copper occurrences occur throughout Tanzania, many of which were identified during German colonial times, and during subsequent geological surveys (Figure 6-6).

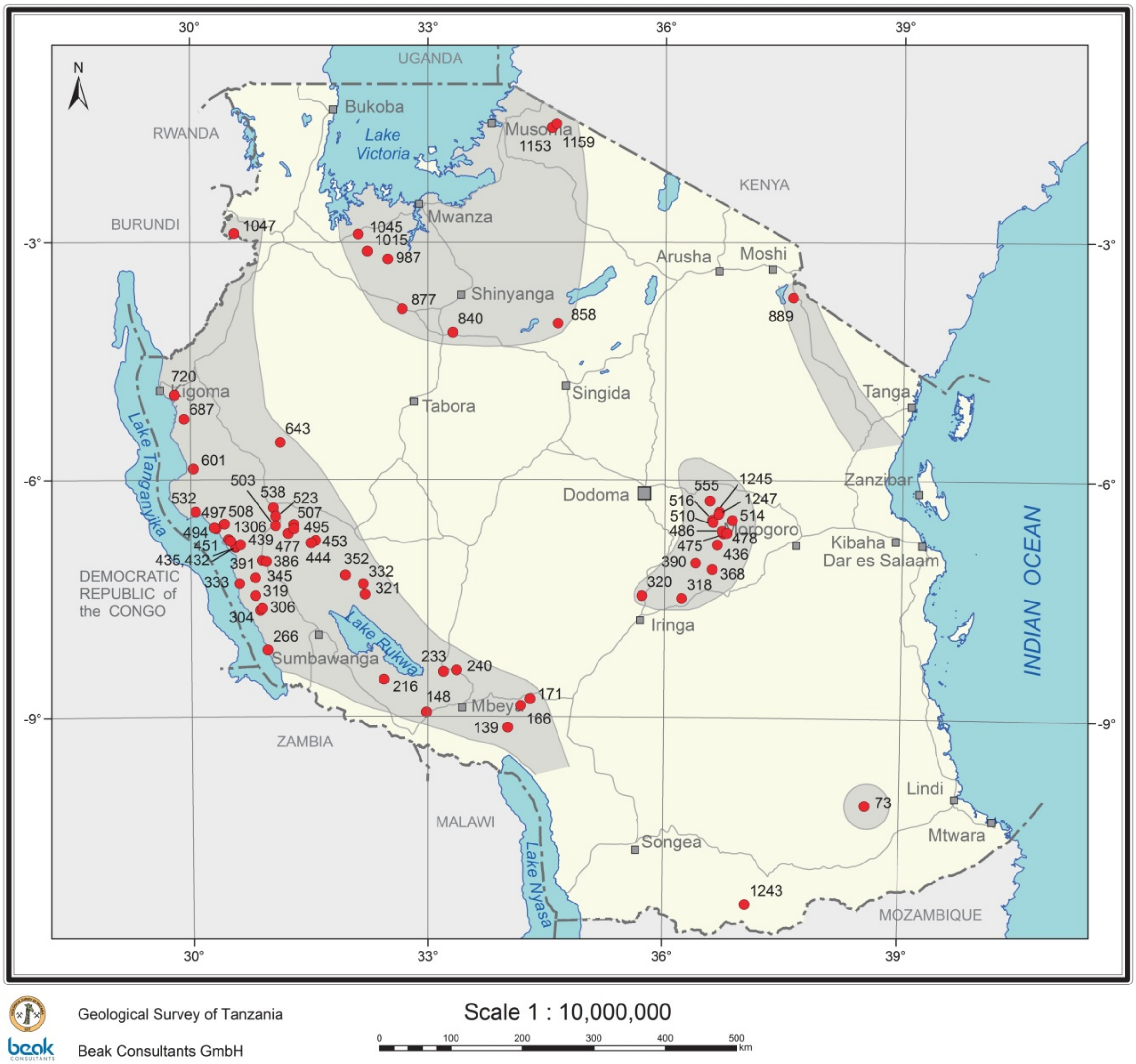

Figure 6-6: Copper occurrences in Tanzania (after GST, 2015a).

In Tanzania, the current main copper production originates from the Lake Victoria gold field where it is produced as a by-product of gold mining, particularly from the African Barrick Gold Bulyanhulu and Buzwagi gold mines. However, smaller-scale and artisanal copper production is common throughout the country and evident in the Mpwapwa area. According to the latest (2012) version of the USGS Minerals Yearbook (Yager, 2014), the Tanzania copper production figures are as follows:

Table 6-1: Tanzania copper production figures (after Yager, 2014).

Year	2008	2009	2010	2011	2012
Copper (t)	2,852	3,079	6,392	6,748	5,840

Largely categorised on the basis of host-rock affiliation, the following types of copper mineralisation have been recognised in Tanzania (GST, 2015a):

- Cu in Archaean hydrothermal gold-quartz formations in the Lake Victoria gold field
- Cu in Neoproterozoic volcanogenic rocks of the Malagarasi platform
- Cu in Proterozoic rocks, probably of volcanogenic-sedimentary stratabound origin
- Cu in Proterozoic meta-calcareous and amphibolitic rocks
- Cu in Palaeozoic gold-quartz veins of the Mpanda and Lupa gold fields
- Cu in Mid-Meso-Cenozoic carbonatites, often in association with REE, Nb, Ta, Au, Pb and P
- Cu hosted by mafic/ultramafic layered intrusions, often in association with Ni, Co, PGM, and Au.
- Polymetallic Cu in a metamorphic greenstone environment
- Sporadic Cu minerals in pegmatites

The Mpwapwa area is well known for its copper occurrences and several are included on the published geological mapping, as represented in Figure 6-7.

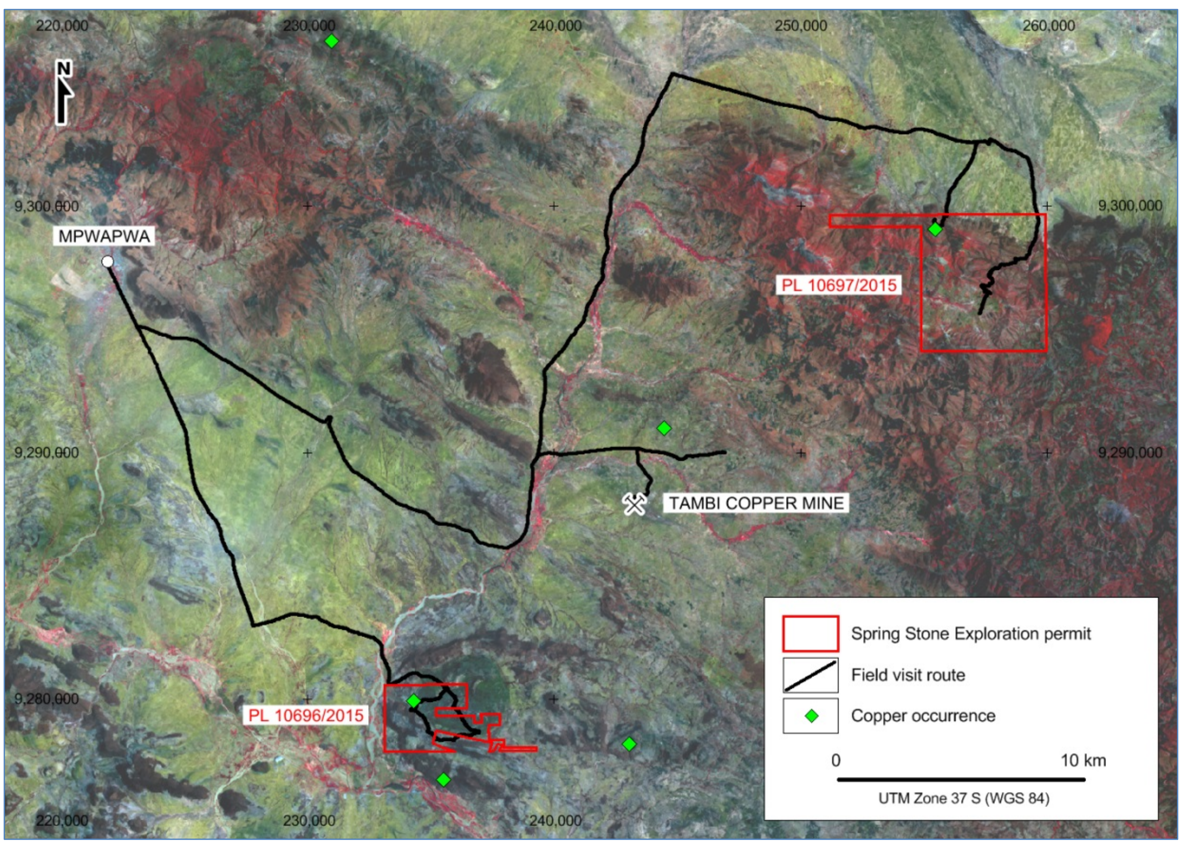

Figure 6-7: Copper occurrences in the Mpwapwa area (after GST 1958 & 1959).

According to the text accompanying the published geological mapping (GST, 1959), traces of copper were found in numerous areas (Godegode, Mlenga, Kimagai, Mwasa and Lufusi). However at that time, none of the known occurrences were economically workable. Copper mineralisation was also known at Tambi, Sagara and Mlali (GST, 1958).

Near Tambi, the copper occurrences are described as being primarily hosted by Proterozoic meta-calcareous and amphibolitic rocks and pegmatitic veins. However, they also reportedly occur within pyroxene and amphibole bearing biotite gneisses, quartz-feldspar rocks, quartzites, amphibolites, meta-calcareous rocks and also pegmatitic and metasomatic environments.

Mineralisation is typically concordant with bedding and foliation, and often occurs at lithological contacts where it forms small pockets and coarse-grained masses. Mineralogically it consists of chalcopyrite, bornite and sometimes pyrite. Associated minerals include scapolite, amandine, epidote, amphibole and feldspar.

South of Tambi village, artisanal miners are currently exploiting massive copper mineralisation that is preferentially hosted by amphibolite in contact with meta-carbonate and calc-silicate rocks. According to the published geological mapping, these workings (and many of the other Cu occurrences in the area) coincide with hornblende-diopside gneiss and quartzite (meta-calcareous) (Xcm) and hornblende-diopside limestone and gneiss (Xcs).

Geochemical results from the Tambi copper occurrences are provided in Table 6-2.

Table 6-2: Geochemical results from the Tambi copper occurrences (after GST, 2015a).

		TZ227R1	TZ227R2	TZ227R5	TZ228R1	TZ228R5	TZ229R3	TZ230R2	TZ230R3
SiO_2	%	65.50	48.90	45.10	72.90	52.40	70.70	31.30	22.70
TiO_2	%	0.04	0.26	0.26	0.08	0.20	0.07	0.07	0.06
Al_2O_3	%	15.20	12.30	9.09	11.65	8.53	14.15	2.50	1.03
Fe_2O_3	%	1.77	8.78	5.81	1.22	9.07	1.03	41.70	37.70
MnO	%	0.02	0.11	0.13	0.03	0.16	0.02	0.13	0.10
MgO	%	1.03	7.76	5.42	1.31	6.41	0.84	6.13	4.44
CaO	%	6.88	12.65	20.80	6.03	15.95	5.24	12.95	9.12
Na_2O	%	3.25	1.57	1.96	2.71	1.73	4.93	0.81	0.44
K_2O	%	1.59	2.51	0.35	2.65	0.42	0.75	0.09	0.03
P_2O_5	%	0.02	0.16	0.04	0.03	0.17	0.06	0.11	0.12
LOI	%	2.96	2.78	8.05	1.15	1.47	2.01	3.52	12.65
Cu	%	0.69	0.55	0.86	0.29	1.73	1.45	0.67	10.25
Total	%	98.95	98.33	97.87	100.05	98.24	101.25	99.98	98.64
S	%	0.22	0.24	0.33	0.23	0.67	0.22	15.35	21.50
Ag	ppm	1.4	2.5	2.6	2.3	4.3	4.8	1.8	30
Au	ppm	0.008	0.01	0.005	0.002	0.048	0.025	0.036	1.08
Bi	ppm	<2	<2	3	<2	<2	2	5	24
Cd	ppm	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
Co	ppm	7	41	18	6	37	5	528	604
Ni	ppm	17	49	34	25	51	11	248	226
Mo	ppm	<1	1	<1	<1	<1	<1	12	68
Pb	ppm	19	12	11	12	10	11	4	2
Sb	ppm	<5	6	<5	<5	<5	<5	<5	<5
Se	ppm	<10	<10	<10	<10	<10	<10	10	30
Te	ppm	10	10	<10	10	10	10	10	10
Zn	ppm	12	34	25	11	44	10	54	185

In the sample that contains > 10% Cu (TZ230R3), the sample also appears to contain some gold (1.08 g/t Au) and silver (30 g/t Ag). In the accompanying text, this sample is described as amphibolite containing approximately 20% chalcopyrite and some pyrite.

Historically, only oxidised copper mineralisation was exploited, with grades varying between 0.5 and 2% Cu. Recently, higher-grade sulphide mineralisation has attained between 15 to 18% Cu, according to the GST (2015).

At the time of the SRK field visit, it was reportedly estimated (but unconfirmed) that the Tambi area included 10 to 15 actively exploited copper workings (GST, pers. comm.).

The actively exploited mine south of Tambi village was observed during the site visit (Figure 6-8).

Figure 6-8: View of the Tambi copper mine (looking west).

At the time of the visit, the open-cut measured approximately 100 m long, up to 12 m wide (although narrows with depth) and up to 15 m deep. It was elongate subparallel to the foliation, striking at 114 degrees (corrected for magnetic declination) and steeply dipping at 78 degrees to the south.

The host rock was observed to be slightly weathered, competent, foliation amphibole-biotite gneiss with foliation-parallel quartz veins / veinlets.

The mining method involved blasting and using an excavator (just visible in Figure 6-8).

In the floor of the workings, conspicuous malachite and lesser amounts of azurite were observed (Figure 6-9).

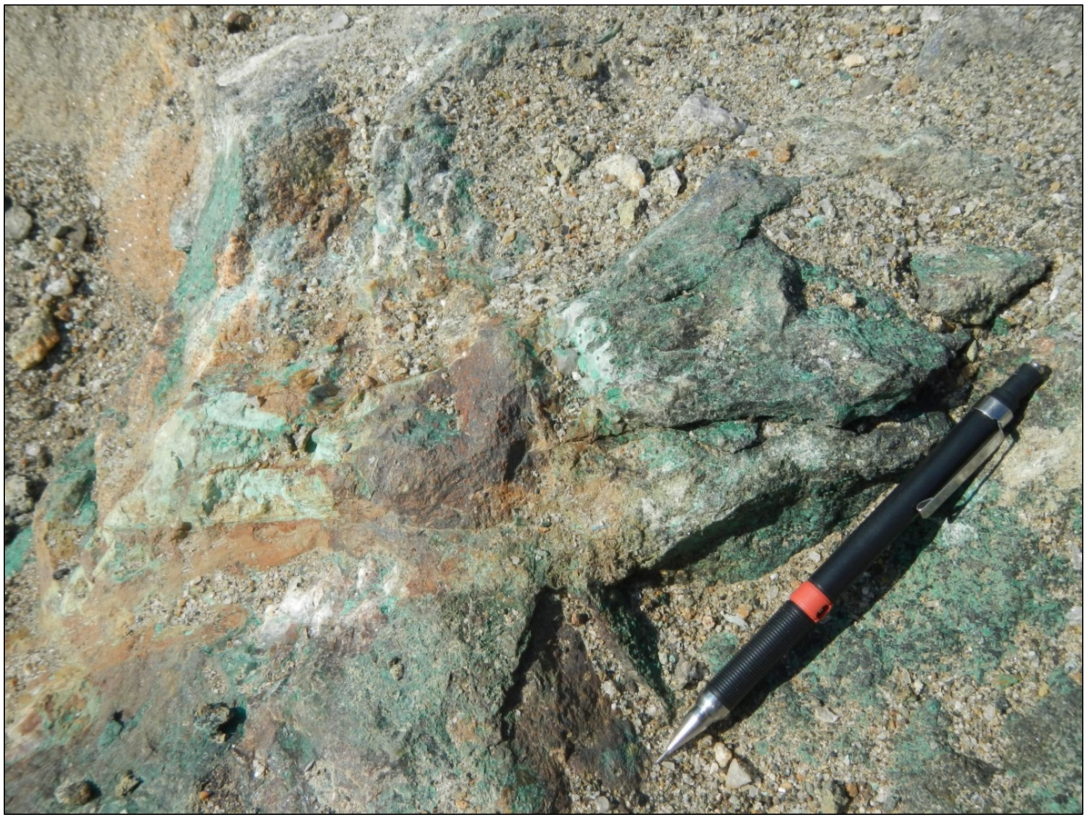

Figure 6-9: Malachite within the Tambi open-cut workings.

A short distance away from the open-cut, the miners had stockpiled mineralised material in preparation for transportation. Approximately 150 t is produced per month and is transported by truck to Dar es Salaam for smelting.

The stockpiled material consisted of both primary chalcopyrite-dominant and secondary malachite-azurite mineralisation.

An example of the primary sulphide-dominant mineralisation is shown in Figure 6-10. The chalcopyrite is semi-massive to massive and accompanied by pyrite and minor quartz, amphibole, biotite and small flakes of graphite.

The malachite and azurite-dominant mineralisation was volumetrically more abundant and some of the material was brecciated. Accompanying minerals included minor epidote and potassium feldspar.

Figure 6-10: Sulphide mineralisation from the Tambi open-cut workings.

The Kimagai property includes a documented copper occurrence that was indicated on the historical mapping (GST, 1959). It is reportedly called Tschamihene and collected samples contained approximately 20% Cu (Rees Williams, 1953). Although this occurrence has not yet been confirmed in the field, mineralisation has been observed elsewhere in the property.

JOGMEC identified a large, locally-derived boulder consisting of brecciated amphibolite, with quartz, actinolite and copper oxides (Figure 6-11). The boulder was described as being moderately to intensely altered, with alteration minerals including actinolite, albite and epidote. The copper oxide minerals preferentially occurred within the matrix of the breccia. A rock chip sample was collected and analysed (MPW-15R) and returned 0.51% Cu, 0.33 g/t Au and 5.1 g/t Ag.

During the SRK field visit, a large mineralised boulder (approximately 1.5 x 1.5 x 1.0 m in height) was observed in the vicinity of the JOGMEC locality (Figures 6-11 and 6-12). It consisted of amphibolite with abundant chlorite, actinolite and quartz. Mineralisation consisted of malachite and azurite, within the country rock and the quartz. The veining was very erratic with both abrupt and diffuse contacts.

As second boulder of interest was observed at 235,437 / 9,278,345 (Figure 6-13). Whilst this occurs just outside of the Kimagai property, it occurred on a slope and it is considered likely to have been derived from within the property. The boulder consisted of a quartz and iron oxide (hematite and limonite) breccia, as shown in Figures 6-13 and 6-14.

Figure 6-11: Mineralised boulder within the Kimagai property.

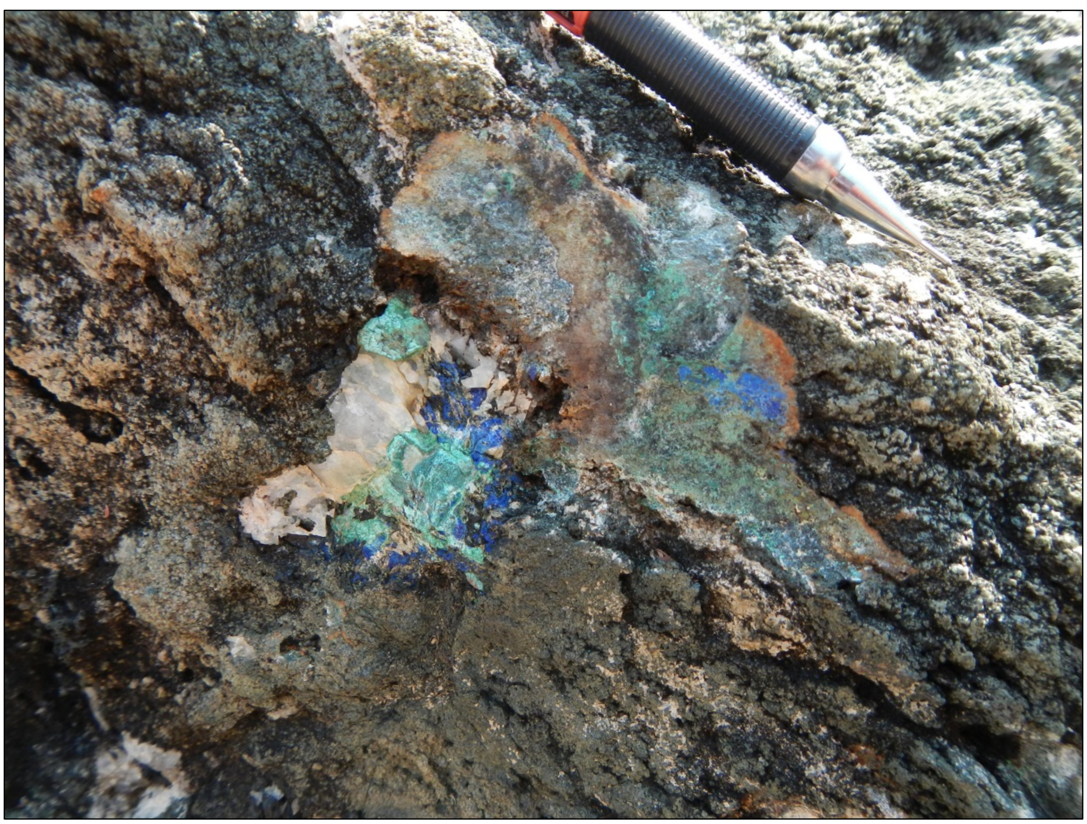

Figure 6-12: Close-up of mineralisation in the boulder within the Kimagai property.

Figure 6-13: Iron oxide breccia from adjacent to the Kimagai property.

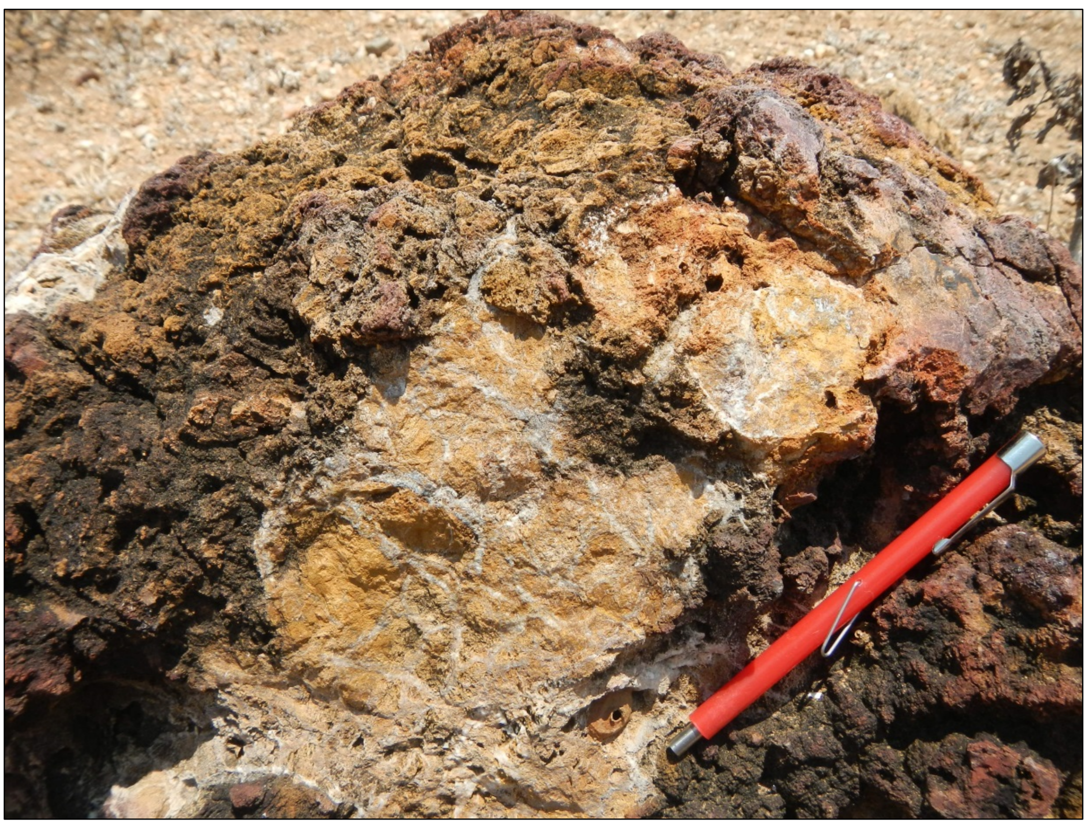

Figure 6-14: Close-up of the iron oxide breccia from adjacent to the Kimagai property.

The Mlali property includes what is described as a copper-graphite-corundum-kyanite “Mine or prospect, not working”, but is not associated with any additional information (GST, 1958).

The occurrence was visited by SRK during the field visit and observed to consist of at least four historical excavations, as summarised in Table 6-3.

Table 6-3: Summary of historical workings in the Mlali property.

ID	UTM X	UTM Y	Width (m)	Length (m)	Depth (m)	Lithology	Notes
1	255,495	9,299,253	4.0	4.0	4.0	Biotite gneiss / Pyroxene amphibolite	At lithological contact
2	255,558	9,299,179	1.5	3.0	12.0	Pyroxene amphibolite	
3	255,603	9,299,173	2.0	6.0	6.0	Pyroxene amphibolite	
4	255,627	9,299,169	?	?	?	Pyroxene amphibolite	Overgrown

One of the excavations (1) occurs at the lithological contact between biotite gneiss +/- garnet and kyanite (Xx) and diopside amphibolite +/- garnet (Xt).

The other three align on an ENE trend over a distance of approximately 70 m. They all appear to occur in the footwall of a continuous quartz vein observed to be approximately 0.60 m thick, trending at 095 degrees and dipping steeply to the south. It is not known exactly what was exploited from the workings, but the discarded material consisted of abundant white quartz.

Two of the historical excavations are shown in Figures 6-15 and 6-16.

Figure 6-15: View of historical working 2 in the Mlali property.

Figure 6-16: View of historical working 3 in the Mlali property.

7 Deposit Types

Whilst the Geological Survey of Tanzania has described copper in association with a variety of rock types, and constrained some of these by time (as summarised in Section 6.4), there is not a definitive mineral deposit model for copper in Tanzania. This is considered to be because contemporary and systematic exploration for copper in Tanzania is in its infancy, and as a result, there has not yet been enough copper-specific exploration to develop such a model.

Based upon the available published information, the copper occurrences in the Mpwapwa area are mainly hosted by Proterozoic meta-calcareous and amphibolitic rocks. Mineralisation is typically concordant with foliation, and often occurs at lithological contacts where it forms small pockets and coarse-grained masses. Mineralogically it consists of chalcopyrite, bornite and sometimes pyrite. Associated minerals include scapolite, amandine, epidote, amphibole and feldspar.

On the basis of their exploration, JOGMEC observed that copper mineralisation in the Mpwapwa area is largely structurally controlled and associated with faulting and brecciation occurring along WNW-ESE to NW-SE trends. Mineralogically it includes magnetite, pyrite, chalcopyrite and bornite, and is associated with Na and Ca alteration with minerals that include actinolite, albite and epidote.

However, their satellite imagery interpretation also identified several circular features that are thought may represent orthomagmatic mafic-ultramafic intrusions, and some of the soil sampling results (in areas beyond those described in this report) returned anomalous copper, nickel and platinum values.

On the basis of these observations, JOGMEC are currently targeting two potential types of copper mineralisation: Iron Oxide Copper Gold (IOCG) and intrusive-hosted copper, nickel and platinum group elements.

7.1 Iron Oxide Coper Gold mineralisation

The term IOCG was first introduced in the early 1990s to try and characterise Proterozoic iron oxide (Cu-U-Au-REE) deposits. However, the exact definition of what constitutes IOCG mineralisation is somewhat contentious due to the diversity in age, geochemical signature, mineralogy, host rock and geological setting of deposits that have been categorised as IOCG.

The general consensus is that IOCG deposits represent a type of mineralisation within a continuum of other deposit types that include porphyry, skarn, epithermal and carbonatite.

IOCG mineralisation can be defined as having the following main characteristics (after Groves, et al., 2010):

- A magmatic-hydrothermal deposit that contains copper and gold
- Is structurally controlled and commonly contains significant volumes of breccia
- Is commonly associated with pre-sulphide sodic or sodic-calcic alteration and shows alteration and/or brecciation zones on a large, commonly regional scale relative to mineralisation
- Has abundant low-Ti iron oxides and/or iron silicates intimately associated with, but generally paragenetically older than Fe-Cu sulphides

- Is enriched in light Rare Earth Elements (LREE) and has a low iron sulphide content (i.e. lacking abundant pyrite)
- Lacks widespread quartz veining or silicification
- Has a temporal, but not close spatial, relationship with major magmatic intrusions

This definition distinguishes IOCG mineralisation from most other hydrothermal Cu-Au deposits where pyrite dominates, other copper sulphides and gold are subordinate and quartz veining and silicification are commonly found alongside iron oxides.

The genesis of IOCG mineralisation is also contentious. Groves, et al. (2010) suggest that partial melting of subcontinental lithospheric mantle produces basic and ultrabasic melts, enriched in volatiles, Cu and Au. This melt ponds at the lithoshphere-crust boundary and creates felsic magmas by melting the continental crust. These rise first creating mid-crustal plutons, followed by mafic magmas, forming multiple phases of intrusion. Large volume volatile exsolution at depth creates giant breccia pipes with silicate rocks being replaced by Fe-oxides, followed by Cu, Au, U and other enriched elements. This applies in the case of intracratonic deposits, particularly those related to old Archean crust. It is thought that these deposits formed 100-200 Ma after supercontinent assembly, likely related to underplating of the continental lithosphere.

A useful generic IOCG model is provided by Lefebure (1995) and summarised as follows:

GENERAL:

SYNONYMS: Olympic Dam type, Kiruna type, apatite iron ore, porphyrite iron, iron oxide rich deposits, Proterozoic iron oxide (Cu-U-Au-REE), volcanic-hosted magnetite.

COMMODITIES (BYPRODUCTS): Fe, P, Cu, Au, Ag, U (potential for REE, Ba, F).

EXAMPLES: Iron Range and Sue-Dianne (Northwest Territories, Canada); Wernecke breccias (Yukon, Canada), Kiruna district(Sweden), Olympic Dam (Australia), Pea Ridge and Boss-Bixby (Missouri, USA), El Romeral (Chile).

GEOLOGICAL CHARACTERISTICS:

CAPSULE DESCRIPTION: Magnetite and/or hematite breccia zones and veins that form pipes and tabular bodies hosted by continental volcanics, sediments and intrusive rocks. The deposits exhibit a wide range in their nonferrous metal contents. They vary from Kiruna type monometallic (Fe ± P) to Olympic Dam type polymetallic (Fe ± Cu ± U ± Au ± REE).

TECTONIC SETTING: Associated with stable cratons, typically associated with grabens related to rifting. Intracratonic extensional tectonics, coeval with host rock deposition. Upper crustal igneous or sedimentary rocks.

DEPOSITIONAL ENVIRONMENT / GEOLOGICAL SETTING: Found crosscutting a wide variety of sedimentary and igneous rocks. Magnetite-apatite deposits show an affinity for volcanics and associated hypabyssal rocks.

AGE OF MINERALISATION: Proterozoic to Tertiary and believed to be virtually contemporaneous with associated suite of intrusive and/or volcanic rocks. Polymetallic Fe oxide deposits are commonly mid-Proterozoic age varying from 1.2 to 1.9 Ga.

HOST / ASSOCIATED ROCK TYPES: Veins and breccias crosscut, or are conformable with, a wide variety of continental sedimentary and volcanic rocks and intrusive stocks, including felsic volcanic breccia, tuff, clastic sedimentary rocks and granites. Fe oxides have been reported as common accessories in the associated igneous rocks. In some deposits the Fe oxide forms the matrix to breccias which are composed of lithic and oxide clasts (usually hematite fragments), hematite-quartz microbreccia and fine-grained massive breccia. Some deposits have associated hematite-rich breccias, bedded Fe oxides and Fe oxide-bearing volcanic rocks which are conformable with associated volcanic rocks.

DEPOSIT FORM: Discordant pod-like zones, veins (dike-like), tabular bodies and stockworks. In some deposits dikes are overlain by Fe oxide tuffs and flows. The veins and tabular zones extend horizontally and vertically for kilometres with widths of metres to hundreds of metres.

TEXTURE / STRUCTURE: Cu-U-Au mineralisation is typically hosted in the Fe oxide matrix as disseminations with associated microveinlets and sometimes rare mineralised clasts. Textures indicating replacement and microcavity filling are common. Intergrowths between minerals are common. Hematite and magnetite may display well developed crystal forms, such as interlocking mosaic, tabular or bladed textures. Some of the deposits (typically hematite rich) are characterised by breccias at all scales with Fe oxide and host rock fragments which grade from weakly fractured host rock on the outside to matrix-supported breccia with zones of 100% Fe oxide in the core. Breccias may be subtle in hand sample as the same Fe oxide phase may comprise both the fragments and matrix. Breccia fragments are generally angular and have been reported to range up to more than 10 m in size, although they are frequently measured in centimetres. Contacts with host rocks are frequently gradational over scale of centimetres to metres. Hematite breccias may display a diffuse wavy to streaky layered texture of red and black hematite.

ORE MINERALOGY (Principal and subordinate): The deposits vary between magnetite-apatite deposits with actinolite or pyroxene (Kiruna type) and hematite-magnetite deposits with varying amounts of Cu sulphides, Au, Ag, uranium minerals and REE (Olympic Dam type). Hematite (variety of forms), specularite, magnetite, bornite, chalcopyrite, chalcocite, pyrite, digenite, covellite, native copper, carrolite, cobaltite, Cu-Ni-Co arsenates, pitchblende, coffinite, brannerite, bastnaesite, monazite, xenotime, florencite, native silver and gold and silver tellurides. At Olympic Dam, Cu is zoned from a predominantly hematite core (minor chalcocite-bornite) to chalcocite-bornite zone then bornite-chalcopyrite to chalcopyrite-pyrite in the outermost breccia. Uraninite and coffinite occur as fine-grained disseminations with sulphides; native gold forms fine grains disseminated in matrix and inclusions in sulphides. Bastnaesite and florencite are very fine grained and occur in matrix as grains, crystals and crystal aggregates.

GANGUE MINERALOGY (Principal and subordinate): Gangue occurs intergrown with ore minerals, as veins or as clasts in breccias. Sericite, carbonate, chlorite, quartz, fluorite, barite, and sometimes minor rutile and epidote. Apatite and actinolite or pyroxene with magnetite ores (Kiruna type). Hematite breccias are frequently cut by 1 to 10 cm veins with fluorite, barite, siderite, hematite and sulphides.

ALTERATION MINERALOGY (Principal and subordinate): A variety of alteration assemblages with differing levels of intensity are associated with these deposits, often with broad lateral extent. Olympic Dam type: Intense sericite and hematite alteration with increasing hematite towards the centre of the breccia bodies at higher levels. Close to the deposit the sericitised feldspars are rimmed by hematite and cut by hematite veinlets. Adjacent to hematite breccias the feldspar, rock flour and sericite are totally replaced by hematite. Chlorite or k-feldspar alteration predominates at depth. Kiruna type: Scapolite and albite. There may also be actinolite-epidote alteration in mafic wall rocks. With both types of deposits quartz, fluorite, barite, carbonate, rutile, orthoclase, ± epidote and garnet alteration are also reported.

WEATHERING: Supergene enrichment of Cu and U.

ORE CONTROLS: Strong structural control with emplacement along faults or contacts, particularly narrow grabens. Mid-Proterozoic rocks particularly favourable hosts. Hydrothermal activity on faults with extensive brecciation. May be associated with felsic volcanic and alkalic igneous rocks. In some deposits, calderas and maars have been identified or postulated. Deposits may form linear arrays more than 100 km long and 40 km wide with known deposits spaced 10-30 km along trend.

ASSOCIATED DEPOSIT TYPES: Volcanic-hosted U; alkaline porphyry Cu-Au deposits; supergene uranium veins.

EXPLORATION GUIDES:

GEOCHEMICAL SIGNATURE: Anomalously high Cu, U, Au, Ag, Ce, La, Co, ± P, F and Ba.

GEOPHYSICAL SIGNATURE: Large positive gravity anomalies because of Fe oxides. Regional aeromagnetic anomalies related to magnetite and/or coeval igneous rocks. Radiometric anomalies expected with polymetallic deposits containing uranium.

OTHER EXPLORATION GUIDES: Proterozoic faulting with associated Fe oxides (particularly breccias), possibly related to intracratonic rifting. Widespread hematite, sericite or chlorite alteration related to faults. Possibly form linear arrays 100 or more kilometres long and up to tens of kilometres wide.

ECONOMIC FACTORS:

TYPICAL GRADE AND TONNAGE:

Deposits may exceed 1,000 Mt grading 1.0 to 2.5% Cu, 0.5 to 0.8 g/t Au, and 3.5 to 6 g/t Ag.

IMPORTANCE: These deposits are significant producers of Fe and represent an important deposit type for producing Cu, U and possibly REE.

7.2 Intrusive-hosted Cu, Ni and PGE mineralisation

Intrusive-hosted copper, nickel and platinum group element deposits encompass a variety of sub-types, but a useful general model is summarised after Foose, et al. (1996) and Zientek (2012) as follows:

GENERAL:

SYNONYMS: Stratiform Ni-Cu-PGE deposits, Cu-Ni- PGE pipes in stratiform deposits, Cu-Ni deposits (komatiitic subtype, dunitic subtype, picritic subtype), Duluth-Norilsk type.

COMMODITIES (BYPRODUCTS): Ni, Cu, and PGE (Au and potentially for Fe, Co and Ag).

EXAMPLES: Stillwater Complex (Montana, USA), Norilsk (Norilsk-Talnakn, Russia), Sudbury Complex - impact related (Ontario, Canada), Merensky Reef (Bushveld Complex, South Africa) komatiitic Ni-Cu deposits (Kambalda, Australia), komatiitic Cu-Ni deposits (Mount Keith, Australia).

GEOLOGICAL CHARACTERISTICS:

CAPSULE DESCRIPTION: Magmatic sulphide deposits are derived by a concentration process described as “liquid immiscibility” that involves the separation from the parental magma of a sulphur-rich liquid containing Fe-Ni-Cu, as the sulphide liquid acts as a "collector" for Co (cobalt), Cu (copper), Ni (Nickel), and platinum-group elements (PGE) with concentrations up to 10 to 100,000 times those in silicate liquids. Upon crystallisation the sulphide liquid sinks to the base of the magma chamber forming pyrrhotite, pentlandite and chalcopyrite as the primary sulphide minerals.

TECTONIC SETTING: Can form in a wide range of tectonic regimes (extensional, convergent and impact related) though typically deposits tend to be associated with rifting and extensional tectonics.

DEPOSITIONAL ENVIRONMENT / GEOLOGICAL SETTING: Magmatic sulphide deposits can be found in a wide range of geological settings. However typically they are associated with, i) Deformed greenstone belts and calc-alkaline batholiths associated with convergent plate margins, ii) Ophiolite complexes that formed at constructive plate margins, iii) Intraplate magmatic provinces (flood basalts), iv) Passively rifted continental margins, v) impact related (Sudbury).

AGE OF MINERALISATION: Archaean to Tertiary in age, typically 75% of magmatic sulphide deposits are Paleoproterozoic and Neoarchean in age; this is a more magmatic period in the earth’s history. The Norilsk deposits are one of the major deposit exceptions to this, which formed at the Permian-Triassic boundary (flood basalts).

HOST / ASSOCIATED ROCK TYPES: Host rocks are predominantly mafic to ultramafic igneous rocks associated with layered intrusions and intrusions (dykes and sills). Occasionally significant ore is in footwall country rocks of diverse metasedimentary or meta-igneous origin and composition. The metamorphic grade also varies from greenschist- to granulite-facies.

DEPOSIT FORM: Sulphide minerals typically form in concentrations within layered intrusions, cumulate pegmatoids, or stratigraphic intervals which are characterised by major changes or discontinuities in cumulus minerals. Deposits may extend over 100 km’s (e.g. Merensky Reef in the Bushveld).

TEXTURE / STRUCTURE: The mineralogy and textures of sulphide ore record a prolonged and complex process starting with solidification of the sulphide liquid, either as an Fe-Ni rich or an Fe-Cu rich solid solution and continuing solid-state transformation and recrystallisation. These textures can be substantially modified by alteration and weathering. Fe, Ni, and Cu phases are commonly intimately intergrown. In unaltered mineralised units, textures of silicate and sulphide minerals record the distribution and abundance of the sulphide liquids and the interaction between solid silicate minerals and molten sulphide liquid. Komatiitic rocks rich in olivine may have “spinifex texture” which is formed by rapid cooling and used to help classify deposits. The source of the sulphur is typically derived from the surrounding sediments at the time of the magmatic episode.

Magmatic sulphide ore is typically associated with: i) abrupt variations in the cumulus-mineral succession, including major lithological changes, reversals or changes in crystallisation order, discontinuities in mineral fractionation patterns and cyclic units, ii) rocks near the lower contact of an intrusion that may contain country rock xenoliths and may be characterised by irregular variations in grain size, mineralogy, and texture, iii) rocks near the base of a flow, or iv) pegmatoids and rocks enriched in minerals that crystallise late from silicate magmas.

Rocks containing less than 10% sulphide minerals are classed as disseminated ore. Rocks containing 10 to 60% sulphide minerals are classed as matrix ore. Rocks with more than 60% sulphide minerals are classed as massive ore.

ORE MINERALOGY (Principal and subordinate): The dominate ore mineralogy is pyrrhotite, pentlandite and chalcopyrite. Their respective concentrations are determined by the initial bulk composition of the immiscible sulphide liquid.

Minor mineralisation phases include PGE minerals (sulphide, arsenide, telluride, antimonide, and alloy minerals), Ni- and Co-bearing arsenide minerals (e.g. gersdorffite), galena, sphalerite, and gold, silver, and lead telluride minerals.

Remobilised sulphide-mineral assemblages may be copper-rich relative to the other primary mineral assemblages.

GANGUE MINERALOGY: Gangue mineralogy is the same as that of the host rocks typically and consists primarily of plagioclase, orthopyroxene, clinopyroxene, and olivine. Minor, secondary phases include serpentine minerals, talc, magnetite, calcite, epidote, sericite, actinolite, chlorite, tremolite, and clay minerals, which may also be related to the metamorphic grade that the host rocks have been exposed to.

ALTERATION MINERALOGY: Alteration and weathering of sulphide minerals typically result in the formation of violarite, bornite, mackinawite, cubanite, pyrite, marcasite, troilite, vaesite, smythite, polydymite, millerite, hematite, and magnetite. In supergene environments chalcocite, malachite, native copper, cuprite, Ni-Fe carbonate, Ni-Fe carbonate, Ni- and Ni-Fe hydroxycarbonate, and Ni-silicate minerals may form. Gossans commonly form above sulphide-rich rocks where exposed at the surface.

WEATHERING: Supergene enrichment of Cu, there is also potential for the formation of Ni laterites and gossans.

ORE CONTROLS: Sulphide minerals are typically concentrated in structurally low areas at the base of intrusions or flows or may be in zones where silicate magma interacted with xenoliths. Sulphides typically sink to the current base of the magmatic flow during precipitation. Deformation and alteration can remobilise sulphide minerals into breccia ore, fractures, cleavage planes, and veins. Sulphide-mineral assemblages that appear to have precipitated from fluids moving through fault zones or along joint surfaces are typically dominated by pyrite.

ASSOCIATED DEPOSIT TYPES: Asbestos soapstone, greenstone gold, Bushveld chromite, podiform chromite, Bushveld iron-titanium-vanadium, platinum group element placer, Ni-laterites.

EXPLORATION GUIDES:

GEOCHEMICAL SIGNATURE: Soil and sediment signatures typically have elevated metal contents above magmatic sulphide bodies and are a common exploration tool; particular emphasis is placed on Fe, Cu, Ni and PGE as pathfinder elements. Background and anomalous values depend on bedrock and ore compositions.

GEOPHYSICAL SIGNATURE: Induced polarisation, electromagnetic, and magneto-telluric surveys are typically used locate sulphide minerals as sulphides are electrically conductive. Magnetic surveys may also be used as most deposit contains abundant magnetite as well as for regional exploration surveys as looking for mafic and ultramafic rocks. Seismic refraction maybe used to detect large sulphide mineral masses. Gravity surveys can also detect area with mass excesses, such as massive sulphide bodies. Remote sensing may help identify areas in which ore is present. In particular, band ratioing can be used to identify gossans; more generally, images can be used to identify geologic settings that are favourable for the concentration of ore.

ECONOMIC FACTORS:

TYPICAL GRADE AND TONNAGE: Magmatic sulphide deposits may contain widely variable amounts of sulphide minerals and deposit sizes vary greatly. As a generalisation, deposits may be separated into two groups. Platinum-group-element-rich deposits in large, layered intrusions tend to have low sulphide mineral abundances (1 to 5 %) and low total-metal abundances. These deposits can be far in excess of 100 Mt (Merensky Reef, Norilsk & Stillwater Complex) and their size directly correlates with the size of its associated intrusion. PGE grades and thickness vary within a deposit along strike. The reef-type PGE deposits vary considerably between <1 m to 25 m as well as in grades of platinum, palladium, rhodium, and gold. Typically the average grades of PGE reefs that are being mined or actively explored, expressed as the sum of all PGE and gold, range from about 3 to 20 g/t.

Most of the other economically extractable magmatic-sulphide deposits contain substantial amounts of sulphide minerals (most greater than 15%, many exceeding 40%) and contain large metal abundances though tonnage can range from 2 Mt to >100 Mt. Typically the median tonnage and grade for these deposits is 70 Mt @ 0.16% Ni, 0.25% Cu, 0.245 g/t Pt, 0.62 g/t Pl, and 0.085 g/t Au.

IMPORTANCE: These deposits are significant producers of Ni and PGE. Though mined rock (waste and ore) have the potential to oxidise and produce acid and therefore this must be dealt with appropriately to limit any environmental impacts.

8 Exploration

In 2011, the Japan Oil, Gas and Metals National Corporation (JOGMEC) entered into a 5-year program with the Geological Survey of Tanzania. Between 2013 and 2015, this program included the Mpwapwa area and focused on exploration for copper mineralisation.

Preliminary work included satellite imagery analysis and area selection. This utilised Landsat 8 imagery and the creation of false colour composite images for lithological discrimination and structural interpretation. As a result of the image analysis, numerous areas were selected and these included the Kimagai and Mlali properties.

In November 2014, area selection was followed by fieldwork that included geological observations, geochemical sampling and magnetic susceptibility measurements.

JOGMEC observed copper mineralisation at two localities just north of the Kimagai property. One was observed over a few metres within garnet amphibolite and to be concordant with the foliation. It occurred as disseminated pyrite, chalcopyrite and bornite accompanied by some copper oxide minerals. The accompanying mineralogy reportedly consisted of a retrograde assemblage including actinolite, epidote, albite (± mica, quartz and calcite). Brecciated textures were common, along with quartz and/or calcite veinlets developed along the foliation.

Magnetic susceptibility measurements were completed using a Terraplus KT-10 magnetic susceptibility meter that has a precision of up to $1x10^{-6}$ SI units. Measurements of the mineralisation revealed that it was associated with a slightly elevated magnetic response relative to the country rock. However, magnetite was not seen in association with the observed mineralisation.

The second copper occurrence was observed within a highly brecciated amphibolite dominated by actinolite. The observed copper mineralisation consisted of oxide minerals occurring within the drusy matrix of the breccia. No copper sulphides were observed.

JOGMEC collected a total of five samples from within the Kimagai property. These consisted of four soil samples (numbers MPW-11 to MPW-14) and one bedrock sample (number MPW-15R). The sample locations are shown in Figure 6-3.

The soil samples were collected along a NS traverse that extended north of the Kimagai property and along which samples were collected at intervals of approximately 250 m.

The soil samples were collected using a hand auger, with sample depths depending on how far the auger could penetrate. Most samples were collected from a depth of between 0.4 and 0.6 m, but up to 1.0 m and always consisted of material from below the A horizon. The material submitted for analysis was derived from the bottom of the auger hole and typically amounted to between 0.4 and 0.7 kg. This material was placed directly into polythene sample bags that were folded and tied before being dispatched to the laboratory using a courier (DHL).

The single rock sample consisted of chips that were collected from bedrock over an area of 2-3 sq. m. The sample was packaged in the same way as the soil samples.

All of the samples were prepared in the ALS Minerals laboratory in Mwanza, Tanzania and analysed by ALS Minerals in Vancouver, Canada. A detailed description of the preparation and analysis methodology is provided in Section 10.

According to the ALS Minerals Certificate of Analysis (ALS, 2015a), the samples returned the results provided in Table 8-1. The ALS Minerals Certificate of Analysis was not included as an appendix in this report because it contained sample results for other properties.

Table 8-1: Selected geochemical results for samples collected from the Kimagai property.

SampleID	Type	ME-MS41 Ag_ppm	ME-MS41 As_ppm	ME-MS41 Au_ppm	ME-MS41 Ba_ppm	ME-MS41 Bi_ppm	ME-MS41 Ce_ppm	ME-MS41 Co_ppm	ME-MS41 Cu_ppm	ME-MS41 Fe_%	ME-MS41 Hg_ppm
MPW-11	Soil	0.05	0.4	< 0.2	100	0.07	112.00	7.80	**7**	1.46	0.03
MPW-12	Soil	0.59	0.1	< 0.2	610	0.04	6.05	26.50	**399**	3.67	0.04
MPW-13	Soil	0.19	0.1	< 0.2	280	0.03	20.00	19.90	**146**	3.13	0.04
MPW-14	Soil	0.45	0.3	< 0.2	180	0.04	17.15	16.00	**135**	2.81	0.05
MPW-15R	Rock	5.05	1.5	0.30	480	0.11	12.85	4.10	**5,060**	0.87	0.04

SampleID	Type	ME-MS41 La_ppm	ME-MS41 Ni_ppm	ME-MS41 P_ppm	ME-MS41 Pb_ppm	ME-MS41 S_%	ME-MS41 Sb_ppm	ME-MS41 Se_ppm	ME-MS41 Te_ppm	ME-MS41 U_ppm	ME-MS41 Zn_ppm
MPW-11	Soil	60.0	19.0	200	5.8	0.01	0.06	1.00	0.01	0.29	39
MPW-12	Soil	3.4	67.1	270	33.0	0.02	<0.05	0.40	0.02	0.90	207
MPW-13	Soil	10.5	55.0	600	6.3	0.04	<0.05	0.50	0.02	0.08	70
MPW-14	Soil	9.4	46.9	200	3.4	0.02	<0.05	0.40	0.02	0.38	38
MPW-15R	Rock	6.3	19.1	820	74.4	0.14	0.08	7.20	0.29	0.29	12

SampleID	Type	PGM-ICP23 Au_ppm	PGM-ICP23 Pt_ppm	PGM-ICP23 Pd_ppm
MPW-11	Soil	0.001	0.005	0.003
MPW-12	Soil	0.012	0.017	0.061
MPW-13	Soil	0.005	0.014	0.039
MPW-14	Soil	0.006	0.008	0.023
MPW-15R	Rock	0.334	0.010	0.082

Despite there being insufficient geochemical results to complete any meaningful numerical or geostatistical analysis, the single rock sample did return 0.51% Cu, 0.33 g/t Au and 5.1 g/t Ag.

At the time of writing, JOGMEC had not visited the Mlali property and therefore no exploration results are available.

9 Drilling

As far as is known, no drilling has been completed within the Kimagai or Mlali properties.

10 Sample Preparation, Analyses, and Security

The JOGMEC samples were not subject to any preparation prior to dispatch to the laboratory. Collected material was placed directly into polythene sample bags that were folded and tied before being dispatched to the laboratory using a recognised courier (DHL).

JOGMEC did not insert any Quality Assurance / Quality Control (QAQC) samples (blanks, standards / certified reference materials or duplicates) into the sample batch.

All of the samples were prepared in the ALS Minerals laboratory in Mwanza, Tanzania and analysed by ALS Minerals in Vancouver, Canada.

The ALS Mwanza laboratory is an independent facility. Whilst it is not officially accredited, it does operate under the same global quality system and standard protocols established for the accredited ALS laboratories.

At the ALS Mwanza laboratory the samples were weighed and logged-in upon receipt at the laboratory (lab codes WEI-21 and LOG-22 respectively). The soil sample weights, as received by the laboratory, ranged from 0.50 to 0.64 kg. The single rock sample weighed 0.70 kg.

Each sample was subject to a fine crush so that > 70 percent of the material was reduced to < 2 mm (lab code CRU-31). The material was then riffle split (lab code SPL-21) and pulverised so that > 85 percent of the material was reduced to < 75 µm (lab code PUL-31).

The prepared samples were then sent to the ALS Minerals laboratory in North Vancouver, Canada.

The ALS Vancouver laboratory is an independent facility accredited to ISO 17025:2005 by the Standards Council of Canada for a number of specific analytical procedures, including those used to analyse the submitted samples. ALS Minerals laboratories also participate in a number of international proficiency tests, such as those managed by CANMET and Geostats.

The samples were analysed using two methods. One involved digestion of a 0.5 g sample using Aqua Regia in a graphite heating block, cooling, dilution with deionised water, mixing and then analysis for 51 elements (Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr) using Inductively Coupled Plasma - Mass Spectrometry (lab code ME-MS41)

The other method involved determination of Au, Pt and Pd by lead collection fire assay and Inductively Coupled Plasma-Atomic Emission Spectroscopy (lab code PGM-ICP23).

In the opinion of SRK, the sampling preparation, security and analytical procedures used by JOGMEC are consistent with generally accepted industry best practices for a project at this stage and are therefore adequate.

11 Data Verification

SRK were provided digital data by Spring Stone Exploration, JOGMEC and the Geological Survey of Tanzania. These data included, but were not limited to, published and unpublished historical and contemporary technical reports and presentations, published topographical, geological and geophysical mapping, satellite imagery, mineral occurrence data, geochemical results and certificates, and verbal communications. These data sources were systematically reviewed and verified in order to create this technical report.

In the absence of in-house QAQC data, the QAQC data for the batch that included the Kimagai samples was obtained from ALS Minerals in Vancouver (ALS, 2015b). Visual inspection of the ALS QAQC data did not identify any issues.

SRK also visited the Mpwapwa properties. The field visit was completed between September 29 and October 02, 2015 by Mr. Chris Barrett (Principal Exploration Geologist, SRK) who was accompanied by Mr. Masota Mathew Magigita (Senior Geologist, Geological Survey of Tanzania), and Mr. Kulwa Mkalimoto (Chairman, Dodoma Regional Miners Association).

On the basis of the described data verification, no irregularities were identified. In the opinion of SRK, the available data are adequate for the purposes of this technical report.

12 Mineral Processing and Metallurgical Testing

As far as is known, no mineral processing or metallurgical testwork has been completed in relation to the Kimagai or Mlali properties.

13 Mineral Resource Estimates

As far as is known, no mineral resource estimate has been calculated for the Kimagai or Mlali properties.

In accordance with the NI 43-101 reporting guidelines, the Mineral Reserve Estimates, Mining Methods, Recovery Methods, Project Infrastructure, Market Studies and Contracts, Environmental Studies, Permitting, and Social or Community Impact, Capital and Operating Costs and Economic Analysis items have been excluded because the project is insufficiently advanced.

14 Adjacent Properties

Practical attempts were made to identify any relevant information pertaining to properties adjacent to Kimagai and Mlali. This initially involved the use of the online Tanzania Mining Cadastre Portal (TMCP, 2015), the results of which are provided in Figure 14-1. The internet was then used to search the names of the identified property holders. Note that more property holders than shown in Figure 14-1 were identified and searched for.

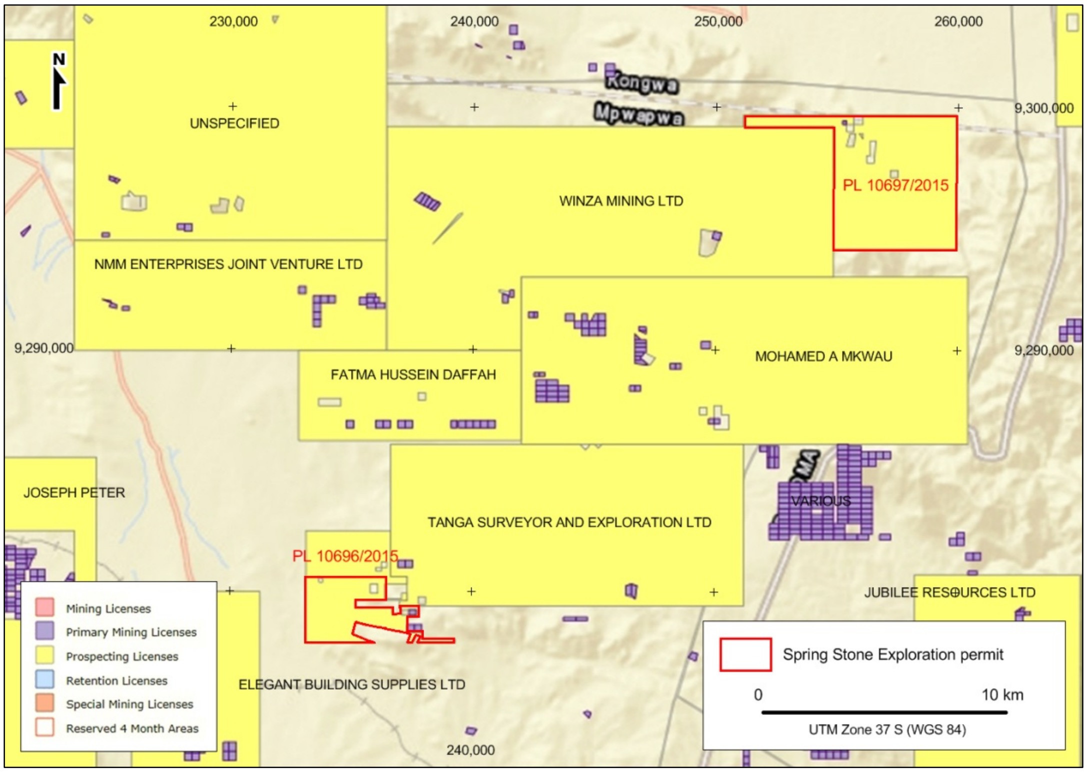

Figure 14-1: Adjacent properties (after TMCP, 2015).

The Tanzania Mining Cadastre Portal indicated that the majority of the properties in the Mpwapwa area are issued for copper, confirming the perceived prospectivity of the area. Other properties were issued for commodities that include gold, nickel and base metals.

Unsurprisingly, the internet searches did not return any relevant information given most properties are held by individuals, syndicates or local companies that do not have a significant public presence.

15 Other Relevant Data and Information

In 2012, a Danish-Tanzanian company called Danformation Tanzania Ltd. opened a new copper smelter in Dar es Salaam (Yager, 2014). The plant reportedly has a capacity to treat approximately 18,000 t of ore per year and there were plans to build two new furnaces each with a capacity of around 120,000 t/yr. High-grade azurite and malachite material were purchased from artisanal miners in Tanzania.

In October 2015, at the time of the SRK field visit, another copper smelter was observed to be being constructed. The smelter is located approximately 4 km northeast of the Tambi mine, midway between the Kimagai and Mlali properties, and being constructed by an unknown Indian company.

The recent construction of smelting facilities is considered to be a positive indication that Tanzania is producing a significant amount of copper and is perceived to be sufficiently prospective to secure this type of infrastructure and investment.

No additional information or explanation is considered necessary to make the technical report more understandable and not misleading

16 Interpretation and Conclusions

The main purpose of this section is to summarise the relevant results and interpretations relating to the Mpwapwa properties. However, the properties are not associated with a substantial number of results because they represent earlier-stage projects that also occur in an under-explored area.

Most of the available data are historical. The 1:125,000-scale geological mapping produced by the Geological Survey of Tanganyika was published in the 1950s. Despite its age, and based upon what was observed as part of the SRK field visit, it is considered to be of good quality. However, like all medium-scale mapping, it requires refinement which can be achieved by using satellite imagery and more detailed field mapping.

The mapping and field observations confirm that the Mpwapwa properties include high metamorphic grade (amphibolite- to granulite-facies) rocks that consist of a variety of gneisses (biotite, hornblende-diopside and migmatitic), amphibolite and lesser amounts of quartzite and meta-calcareous units. The presence of garnet and kyanite accessory minerals substantiates the high metamorphic grade of the area. As indicated on the mapping and observed in the field, the structural setting is complex with multiply phases of deformation.

The observed historical reports were also produced in the 1950s. Whilst most of them provided synoptic descriptions of areas outside of the Mpwapwa properties, they still provided a useful insight into the geological and mineralisation aspects of the area.

The contemporary map and report produced by the Geological Survey of Tanzania in 2015 provides a very good regional overview, and confirms that the Mpwapwa properties occur within a recognised copper district.

During 2013 and 2014, JOGMEC completed activities that included satellite imagery analysis and area selection, geological field observations, soil and rock sampling, and magnetic susceptibility measurements in various parts of the Mpwapwa area. This is considered to represent a systematic and reasonable approach that resulted in the selection of the Kimagai and Mlali properties.

At the current time, copper mineralisation in the Mpwapwa area is poorly understood. This is because the area is under-explored and has not been subject to a significant amount of contemporary exploration.

The Geological Survey of Tanzania has described copper mineralisation as being hosted by a variety of different rock types, although mainly by Proterozoic meta-calcareous and amphibolitic units. Mineralisation is typically concordant with foliation and often occurs at lithological contacts. Mineralogically it consists of chalcopyrite, bornite and sometimes pyrite. Associated minerals include scapolite, amandine, epidote, amphibole and feldspar.

Historically, only oxidised copper mineralisation was exploited, with grades varying between 0.5 and 2% Cu (GST, 2015a). However, recently higher-grade sulphide mineralisation has attained values of between 15 to 18% Cu.

At the time of the SRK field visit, it was reportedly estimated (but unconfirmed) that the Tambi area included 10 to 15 actively exploited copper workings (GST, pers. comm.).

The GST published the results of eight samples collected from the actively exploited Tambi copper workings that are located approximately midway between the Kimagai and Mlali properties. Whilst only mineralised results have been presented, and comprehensive sample details are unknown, they range from 0.29 to 10.25% Cu (Table 6-2). Despite there only being a few results, there does appear to be a correlation between copper, gold and silver with the highest copper grade corresponding to 1.08 g/t Au and 30 g/t Ag.

Significantly, the Kimagai property includes a documented copper occurrence that was indicated on the historical mapping (GST, 1959). It is reportedly called Tschamihene and collected samples contained approximately 20% Cu (Rees Williams, 1953).

The Mlali property also includes an inactive copper-graphite-corundum-kyanite prospect or mine (GST, 1958).

JOGMEC has observed copper mineralisation at various localities in the Mpwapwa area. Based upon their observations, it is typically hosted by amphibolite and consists of disseminated pyrite, chalcopyrite and bornite accompanied by some copper oxide minerals. Na and Ca alteration was noted and the accompanying mineralogy included magnetite, actinolite, epidote, albite (± mica, quartz and calcite). The mineralisation is thought to be largely structurally controlled and associated with faulting and brecciation along WNW-ESE to NW-SE trends.

JOGMEC collected and analysed a total of five samples from within the Kimagai property. These consisted of four soil samples and one bedrock sample. Copper values in the soils ranged from 7 to 399 ppm Cu, but there are an insufficient number of results to complete any meaningful analysis. The single rock sample returned 0.51% Cu, 0.33 g/t Au and 5.1 g/t Ag, confirming the presence of copper within the property.

On the basis of their satellite imagery interpretation, JOGMEC also identified several circular features that are thought may represent mafic-ultramafic intrusions. Some of these were soil sampled (in areas beyond the Mpwapwa properties) and returned anomalous copper, nickel and platinum values.

SRK visited the actively exploited Tambi copper workings and observed boulder-hosted copper mineralisation in the Kimagai property. A boulder of iron oxide breccia was also observed just outside the property, although it is likely it was derived from within it.

Based upon the observations and the review of the available data, the GST and JOGMEC descriptions are considered to be accurate and provide some useful parameters that will facilitate exploration efforts.

Based upon communications with JOGMEC, they are currently targeting two types of copper mineralisation: Iron Oxide Copper Gold (IOCG) and intrusive-hosted copper, nickel and platinum group elements. Generic models for these types of mineralisation are provided in Section 7. The use of generic models is understandable given the earlier-stage nature of the projects. However, such models should be used with caution and substituted with site-specific observations.

Substantial copper mineralisation has yet to be confirmed in the Kimagai and Mlali properties. However, contemporary exploration activities are in their infancy given the Kimagai property has only been subject to a small amount of geochemical sampling and the Mliali property has not been subject to any field-based activities.

Despite their earlier-stage nature, the properties are associated with several merits:

- Tanzania has what is perceived to be a favourable Mining Act and represents a mining-friendly jurisdiction

- The personnel of Spring Stone Exploration and JOGMEC are credited as having good exploration experience, particularly in Africa
- The properties occur within a recognised copper district that is associated with an increasing amount of small-scale and artisanal copper production. Production is seemingly sufficient enough that several processing facilities are being constructed in the area
- High-grade copper values have been reported in the area
- The area is under-explored
- The properties include historical copper occurrences
- The properties are in proximity to some favourable infrastructure (for example, very close to the railway line linking Dar es Salaam with Dodoma, any beyond)
- The amenability of the area to exploration (no major climatic impact, thin regolith / good bedrock exposure, not intensely vegetated, undeveloped, etc.)

What could be perceived as the biggest limitation is the size of the properties. However, whilst the current ground-holding is quite small, it is understood that Spring Stone Exploration are intending to apply for additional properties in the Mpwapwa area.

SRK is not aware of any significant risks or uncertainties that could be expected to affect the reliability or confidence in the exploration information discussed herein.

It is concluded that on the basis of the considered information as described in this report, the Mpwapwa properties have sufficient technical merit to justify the completion of further exploration, as described in Section 17.

17 Recommendations

At this stage, the aim is to identify economic concentrations of copper mineralisation in the Mpwapwa properties. The purpose of this section is therefore to describe a recommended work program to achieve this aim. However, it should be noted that because it is not possible to predict the outcome of the activities, the programs are tentative in nature and could be subject to changes as they develop.

It is fundamentally recommended that systematic and effective exploration activities are completed using best practice and observation-substantiated techniques.

Firstly, it is recommended that a comprehensive district-scale geological interpretation is completed. This would encompass the properties and the general area around them. It should involve the compilation of all available data, including historical geological mapping, regional geophysical data, mineral occurrences, geochemical results and spectral imagery.

Given the type of mineralisation, emphasis should be place on the structural aspects of the interpretation, specifically involving the use of the structural measurements available on the historical geological mapping in conjunction with the regional airborne geophysical data and spectral imagery.

The interpretation should result in the creation of lithological, structural, alteration and geochemical datasets to be used for further targeting and to facilitate the selection of additional ground.

It is recommended that field-based activities commence with concurrent geological mapping and soil sampling. Bedrock exposure is moderately good in both properties and the regolith is generally thin and in-situ (except on the steeper slopes), making them amenable to mapping and sampling.

Given the generally ESE-WNW orientation of the lithologies, north-south orientated traverses are recommended. However, bedrock exposures in drainage channels and road cuttings (that are particularly well-developed in the Mlali property) should also be utilised and geologically mapped.

It is recommended that the geological mapping and soil sampling lines are spaced at no more than 400 m apart with soil samples collected at intervals of no more than 100 m, as shown in Figures 17-1 and 17-2. If observations at the time of the fieldwork suggest mineralisation is in some way constrained, it is recommended that the sample interval is reduced further (given the comparatively narrow anticipated width of the mineralised zones).

It is understood that JOGMEC intend to mobilise a field team to the properties in November 2015 to complete some of the recommended activities. More specifically, they are intending to focus on geological mapping, soil sampling and rock sampling across the circular structures shown in Figures 17-1 and 17-2.The team is to include three Geologists, with field support using local labourers. The estimated costs of this field program, as provided by JOGMEC, are provided in Table 17-1.

Any mineralised bedrock observed during the mapping and soil sampling should of course be submitted for geochemical analysis.

Given the lack of contemporary exploration in the area and the contentious nature of IOCG mineralisation, it is also recommended that representative mineralised samples are submitted for petrographic study.

Given the preliminary magnetic susceptibility results, it is possible that ground magnetics, may potentially facilitate exploration.

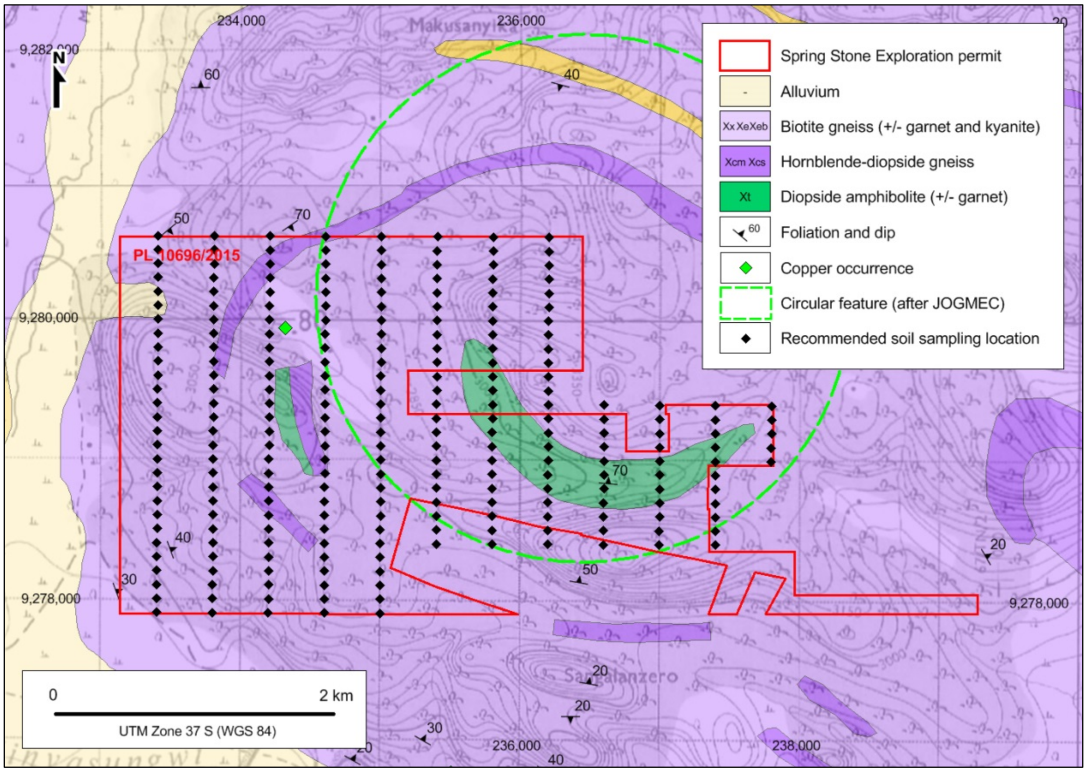

Figure 17-1: Soil sampling grid for the Kimagai property.

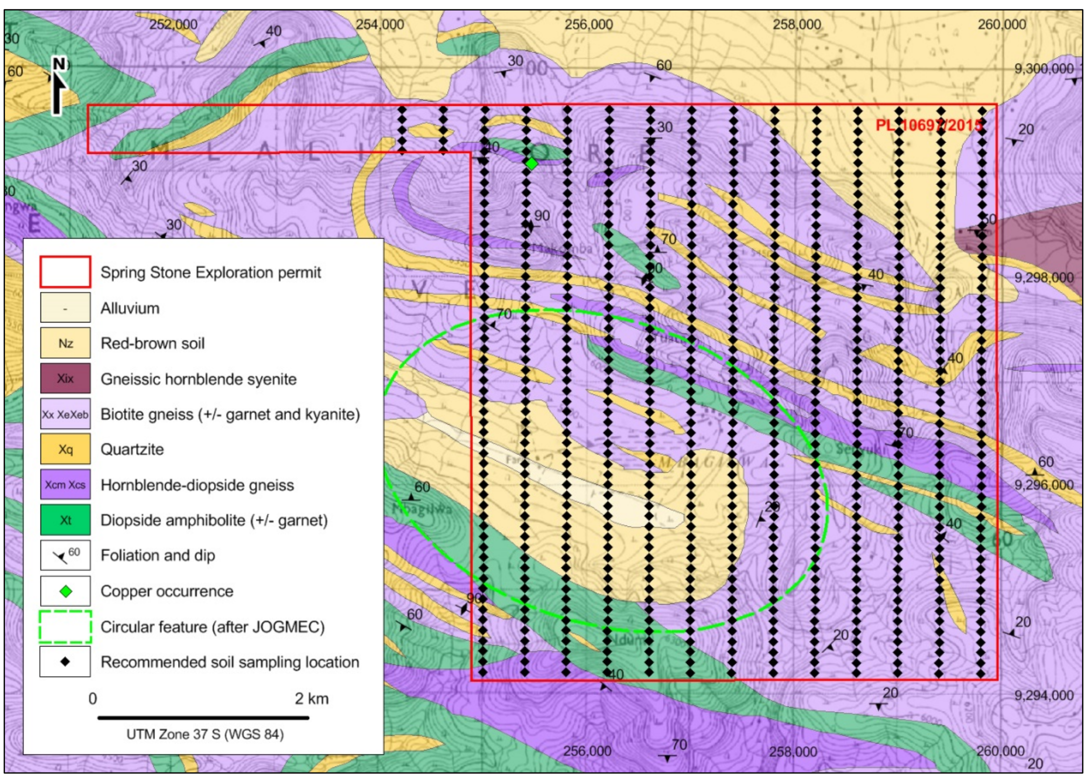

Figure 17-2: Soil sampling grid for the Mlali property.

Table 17-1: Estimated costs for the initial JOGMEC fieldwork (Nov-Dec 2015)

Item	Cost (US$)	Details
Mobilisation	28,000	4 days, including international and domestic flights, vehicle hire, etc.
Local meetings	9,000	5 days, including local accommodation, vehicle hire, etc.
Field survey	18,000	10 days, including local accommodation, vehicle hire, local labourers, etc.
Sample shipping, preparation and analysis	17,500	Approximately 330 samples Sample preparation at ALS Minerals laboratory in Mzanza, Tanzania Sample analysis in ALS Minerals laboratory in Vancouver, Canada
Sub-total:	72,500	
Contingency (10%):	7,250	
TOTAL (rounded):	**80,000**	

It is recommended that suitable Quality Assurance / Quality Control (QAQC) samples (blanks, standards / certified reference materials or duplicates) are inserted into the sample batch(es) at no less than 1 per every 25 to 30 samples.

Given the stipulated budget and scheduling of the JOGMEC program, it is evident that complete soil sampling coverage would require a second field program. The total coverage with lines 400 m apart and samples at 100 m intervals equates to approximately 600 outstanding samples. Based on the available costing, it would cost in the region of US$ 100,000 to complete the soil sampling as part of a second field program.

It is recommended that the soil geochemistry results are comprehensively analysed in conjunction with the geological mapping, digital elevation data and the district-scale interpretation to identify prioritised targets.

Once these targets have been identified, it is recommended that they are tested by pitting, trenching and related sampling. If the results are of sufficient merit, drilling may be justified. However, the execution of a drilling program is entirely contingent on positive results in the preceded activities.

It is not considered possible to present an accurate budget or scheduling for these subsequent activities. However, it is anticipated that the existing properties could be advanced to being drill-target ready for approximately US$ 500,000, assuming that the results are sufficiently encouraging.

18 Acronyms and Abbreviations

Distance	
µm	micron (micrometre)
mm	millimetre
cm	centimetre
m	metre
km	km
”	inch
in	inch
’	foot
ft	foot
Area	
m^2	square metre
km^2	square km
ac	acre
Ha	hectare
Volume	
l	litre
m^3	cubic metre
ft^3	cubic foot
usg	US gallon
lcm	loose cubic metre
bcm	bank cubic metre
Mbcm	million bcm
Mass	
kg	kilogram
g	gram
t	metric tonne
Kt	kilotonne
lb	pound
Mt	megatonne
oz	troy ounce
wmt	wet metric tonne
dmt	dry metric tonne
Pressure	
psi	pounds per square inch
Pa	pascal
kPa	kilopascal
MPa	megapascal
Elements and Compounds	
Au	gold
Ag	silver
Cu	copper
Fe	iron
S	sulphur
CN	cyanide
NaCN	sodium cyanide

Other	
ºC	degree Celsius
ºF	degree Fahrenheit
Btu	British Thermal Unit
cfm	cubic feet per minute
elev	elevation above sea level
masl	m above sea level
hp	horsepower
hr	hour
kW	kilowatt
kWh	kilowatt hour
M	Million
mph	miles per hour
ppb	parts per billion
ppm	parts per million
s	second
s.g.	specific gravity
usgpm	US gallon per minute
V	volt
W	watt
Ω	ohm
A	ampere
tph	tonnes per hour
tpd	tonnes per day
mtpa	million tonnes per annum
Ø	diam
Acronyms	
SRK	SRK Consulting (Canada) Inc.
CIM	Canadian Institute of Mining
NI 43-101	National Instrument 43-101
ABA	Acid- base accounting
AP	Acid potential
NP	Neutralisation potential
NPTIC	Carbonate neutralisation potential
ML/ARD	Metal leaching/ acid rock drainage
PAG	Potentially acid generating
non-PAG	Non-potentially acid generating
RC	reverse circulation
IP	induced polarisation
COG	cut-off grade
NSR	net smelter return
NPV	net present value
LOM	life of mine
Conversion Factors	
1 tonne	2,204.62 lb
1 oz	31.1035 g

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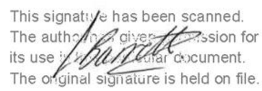
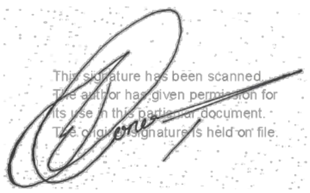
Date and Signature Page

This technical report was written by the following “Qualified Persons” and contributing authors. The effective date of this technical report is October 30, 2015.

Qualified Person	Signature	Date
Chris Barrett, MSc., CGeol		October 30, 2015

Reviewed by



Wayne Barnett, PhD., Pr.Sci.Nat

Principal Structural Geologist

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

APPENDIX A
Mineral Tenure Information

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

PROSPECTING LICENCE NO. PL 10696/2015

GRANTED PURSUANT TO
SECTION 32 OF THE MINING ACT, 2010

WHEREAS **M/S Spring Take Limited** of **P.O. Box 7495, Dar es Salaam-Tanzania** has fulfilled the conditions for grant of Prospecting Licence pursuant to Section 31 of the Mining Act, 2010;

I, Commissioner for Minerals, subject to the provisions of the Mining Act, 2010 and of the regulations thereunder now in force, or which may come into force during the continuance of this Licence, or any renewal thereof and pursuant to the powers conferred upon me under Section 32 of the Mining Act, 2010 hereby grant to M/S **Spring Take Limited** (hereinafter called the Licensee) a **Prospecting Licence - Metallic Minerals,** to prospect for **Gold,** in **Mpwapwa** District, over an area described in Annex A (hereinafter called the Licence Area), conferring on the Licensee the right to carry on such prospecting operations, abide to Annex B and Annex C and execute such other works as are necessary for that purpose.

This Licence, unless sooner cancelled, suspended or surrendered pursuant to the provisions of the Mining Act, 2010, shall be valid for a period of **forty eight (48)** months, effective from the date of grant.

Granted this 6TH day of OCTOBER 2015

....

Eng. Paul M. Masanja
COMMISSIONER FOR MINERALS

0005477

Licence PL 10696/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

INITIAL PERIOD

From Date	To Date	Prep. Fee and Rent	ERV Number	Date	Signature of CM
06/10/2015	05/10/2016	Tsh 107500/=	4376581	03/09/2015	[signature]
06/10/2015	05/10/2016	1605.00	7755927	20/10/2015	[signature]

FOR COMMISSIONER FOR MINERALS

FIRST RENEWAL

I HEREBY CONSENT TO THE FIRST RENEWAL OF PROSPECTING LICENCE NO. ……………………… of M/S ……………………………of P. O. Box ……… for Licence Area described in Annex 'A' and conditions prescribed in Annex 'B' and Annex 'C' for a period of…….months effective from the ……..day of…….year………

……………………………………………………………………………

COMMISSIONER FOR MINERALS

From Date	To Date	Annual Rent	ERV Number	Date	Signature of CM

SECOND RENEWAL

I HEREBY CONSENT TO THE SECOND RENEWAL OF PROSPECTING LICENCE NO. ……………….. of M/S …………………………..of P.O. Box ………

for Licence Area described in Annex 'A' and conditions prescribed in Annex 'B' for a period of……...months effective from the ………..day of…………year………………

……………………………………………………………………………

COMMISSIONER FOR MINERALS

From Date	To Date	Annual Rent	ERV Number	Date	Signature of CM

[signature]

0005478

Licence PL 10696/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

ANNEX A

DESCRIPTION OF THE LICENCE AREA

Subject to Section 95 of the Mining Act, 2010 the Licence is in **Mpwapwa** District, QDS **164/3, 181/1** defined by lines of latitude and longitude having the following corner coordinates (Arc 1960):

Corner	Latitude	Longitude
1	- 06 deg. 31 min. 13.60 sec.	36 deg. 37 min. 6.70 sec.
2	- 06 deg. 31 min. 12.75 sec.	36 deg. 37 min. 3.33 sec.
3	- 06 deg. 31 min. 11.51 sec.	36 deg. 36 min. 57.55 sec.
4	- 06 deg. 31 min. 11.30 sec.	36 deg. 36 min. 57.60 sec.
5	- 06 deg. 31 min. 9.60 sec.	36 deg. 36 min. 47.90 sec.
6	- 06 deg. 31 min. 7.40 sec.	36 deg. 36 min. 38.40 sec.
7	- 06 deg. 31 min. 5.20 sec.	36 deg. 36 min. 28.50 sec.
8	- 06 deg. 31 min. 3.00 sec.	36 deg. 36 min. 17.70 sec.
9	- 06 deg. 31 min. 11.10 sec.	36 deg. 36 min. 15.40 sec.
10	- 06 deg. 31 min. 19.30 sec.	36 deg. 36 min. 13.10 sec.
11	- 06 deg. 31 min. 23.50 sec.	36 deg. 36 min. 23.30 sec.
12	- 06 deg. 31 min. 26.80 sec.	36 deg. 36 min. 33.10 sec.
13	- 06 deg. 31 min. 30.00 sec.	36 deg. 36 min. 42.78 sec.
14	- 06 deg. 31 min. 30.00 sec.	36 deg. 35 min. 10.00 sec.
15	- 06 deg. 29 min. 0.00 sec.	36 deg. 35 min. 10.00 sec.
16	- 06 deg. 29 min. 0.00 sec.	36 deg. 37 min. 3.33 sec.
17	- 06 deg. 30 min. 3.30 sec.	36 deg. 37 min. 3.33 sec.
18	- 06 deg. 30 min. 3.30 sec.	36 deg. 37 min. 27.30 sec.
19	- 06 deg. 30 min. 13.30 sec.	36 deg. 37 min. 27.30 sec.
20	- 06 deg. 30 min. 13.30 sec.	36 deg. 37 min. 18.00 sec.
21	- 06 deg. 30 min. 12.00 sec.	36 deg. 37 min. 18.00 sec.
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23	- 06 deg. 30 min. 32.00 sec.	36 deg. 36 min. 58.00 sec.
24	- 06 deg. 30 min. 32.00 sec.	36 deg. 37 min. 18.00 sec.
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26	- 06 deg. 30 min. 23.30 sec.	36 deg. 37 min. 27.30 sec.
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29	- 06 deg. 30 min. 43.30 sec.	36 deg. 36 min. 17.30 sec.
30	- 06 deg. 30 min. 43.30 sec.	36 deg. 37 min. 8.00 sec.
31	- 06 deg. 30 min. 52.00 sec.	36 deg. 37 min. 8.00 sec.
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34	- 06 deg. 30 min. 43.30 sec.	36 deg. 37 min. 17.30 sec.
35	- 06 deg. 30 min. 41.22 sec.	36 deg. 37 min. 17.30 sec.
36	- 06 deg. 30 min. 41.22 sec.	36 deg. 37 min. 42.40 sec.
37	- 06 deg. 30 min. 55.40 sec.	36 deg. 37 min. 42.40 sec.
38	- 06 deg. 30 min. 55.40 sec.	36 deg. 37 min. 27.20 sec.

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THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

39	- 06 deg. 31 min. 5.50 sec.	36 deg. 37 min. 27.10 sec.
40	- 06 deg. 31 min. 5.50 sec.	36 deg. 37 min. 27.40 sec.
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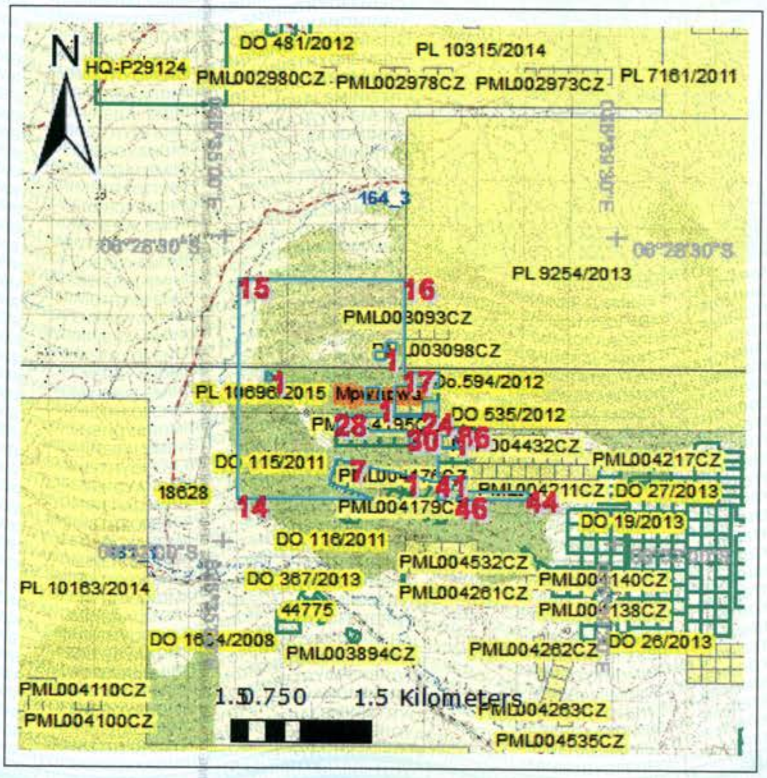
43	- 06 deg. 31 min. 25.50 sec.	36 deg. 37 min. 47.40 sec.
44	- 06 deg. 31 min. 25.50 sec.	36 deg. 38 min. 30.00 sec.
45	- 06 deg. 31 min. 30.00 sec.	36 deg. 38 min. 30.00 sec.
46	- 06 deg. 31 min. 30.00 sec.	36 deg. 37 min. 40.70 sec.
47	- 06 deg. 31 min. 21.70 sec.	36 deg. 37 min. 45.20 sec.
48	- 06 deg. 31 min. 20.30 sec.	36 deg. 37 min. 38.10 sec.
49	- 06 deg. 31 min. 30.00 sec.	36 deg. 37 min. 33.91 sec.
50	- 06 deg. 31 min. 30.00 sec.	36 deg. 37 min. 27.31 sec.
51	- 06 deg. 31 min. 18.70 sec.	36 deg. 37 min. 31.50 sec.
52	- 06 deg. 31 min. 17.10 sec.	36 deg. 37 min. 23.70 sec.
53	- 06 deg. 31 min. 15.50 sec.	36 deg. 37 min. 15.30 sec.

With an exclusion of a valid PML No. 004433CZ, 004434, DO 167/2013, DO 165/2013, DO 168/2013 and DO 664/2012



Legend	
Licensed boundary	
Licence Code	**PL 10696/2015**
District	**Mpwapwa**
Direction	N

An area of approximately **16.05** Square Kilometres.

0005480

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

ANNEX B

EMPLOYMENT AND TRAINING, PROCUREMENT PLAN OF GOODS AND SERVICES

1. The Licensee shall employ Tanzanian personnel with appropriate qualifications to the maximum extent practicable consistent with efficient operations.

2. Subject to Clause 1, the Licensee shall not be restricted in employment, selection, assignment or discharge of its personnel provided, however, that the employment and discharge or disciplining of personnel shall be carried in accordance with the generally applicable laws and regulations of the United Republic of Tanzania.

3. Subject to Clause 1 and to the requirement of any law relating to immigration, the Licensee and its sub-contractor(s) may bring into Tanzania such expatriate personnel as in the Licensee's judgement, required to carry out mineral prospecting operations efficiently and successfully and the Government shall expeditiously provide the necessary work permits and other approvals required for the employment of such expatriate.

4. The Licensee shall be abided by the procurement plan of goods and services available in the United Republic of Tanzania.

Licence PL 10696/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

ANNEX C

PROSPECTING PROGRAMME AND FINANCIAL EXPENDITURE ESTIMATE.

Subject to Section 30 of the Mining Act 2010 and Regulation 8 of the Mining (Mineral Rights) Regulations 2010, the Licensee shall expend on prospecting operations in respect of the licence granted as per submitted prospecting programme and financial expenditure estimates approved by the Licensing Authority.

0005482

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

PROSPECTING LICENCE NO. PL 10697/2015

GRANTED PURSUANT TO
SECTION 32 OF THE MINING ACT, 2010

WHEREAS **M/S Spring Take Limited** of **P.O. Box 7495, Dar es Salaam-Tanzania** has fulfilled the conditions for grant of Prospecting Licence pursuant to Section 31 of the Mining Act, 2010;

I, Commissioner for Minerals, subject to the provisions of the Mining Act, 2010 and of the regulations thereunder now in force, or which may come into force during the continuance of this Licence, or any renewal thereof and pursuant to the powers conferred upon me under Section 32 of the Mining Act, 2010 hereby grant to M/S **Spring Take Limited** (hereinafter called the Licensee) a **Prospecting Licence - Metallic Minerals,** to prospect for **Gold,** in **Mpwapwa** District, over an area described in Annex A (hereinafter called the Licence Area), conferring on the Licensee the right to carry on such prospecting operations, abide to Annex B and Annex C and execute such other works as are necessary for that purpose.

This Licence, unless sooner cancelled, suspended or surrendered pursuant to the provisions of the Mining Act, 2010, shall be valid for a period of **forty eight (48)** months, effective from the date of grant.

Granted this 18TH day of SEPTEMBER 2015

[signature]

Eng. Paul M. Masanja
COMMISSIONER FOR MINERALS

0005354

Licence PL 10697/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

INITIAL PERIOD

From Date	To Date	Prep. Fee and Rent	ERV Number	Date	Signature of CM
18/09/2015	17/09/2016	460=800=	7006834	28/8/2015	[signature]
18/09/2015	17/09/2016	USD 2904.00	7009766	05/10/2015	[signature]

For COMMISSIONER FOR MINERALS

FIRST RENEWAL

I HEREBY CONSENT TO THE FIRST RENEWAL OF PROSPECTING LICENCE NO. ………………… of M/S …………………………of P. O. Box ……….. for Licence Area described in Annex 'A' and conditions prescribed in Annex 'B' and Annex 'C' for a period of……months effective from the ……..day of……..year………

……………………………………………………………………………………

COMMISSIONER FOR MINERALS

From Date	To Date	Annual Rent	ERV Number	Date	Signature of CM

SECOND RENEWAL

I HEREBY CONSENT TO THE SECOND RENEWAL OF PROSPECTING LICENCE NO. ……………….. of M/S …………………………..of P.O. Box ……… for Licence Area described in Annex 'A' and conditions prescribed in Annex 'B' for a period of………months effective from the ………..day of……….year……………

……………………………………………………………………………

COMMISSIONER FOR MINERALS

From Date	To Date	Annual Rent	ERV Number	Date	Signature of CM

0005355

Licence PL 10697/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

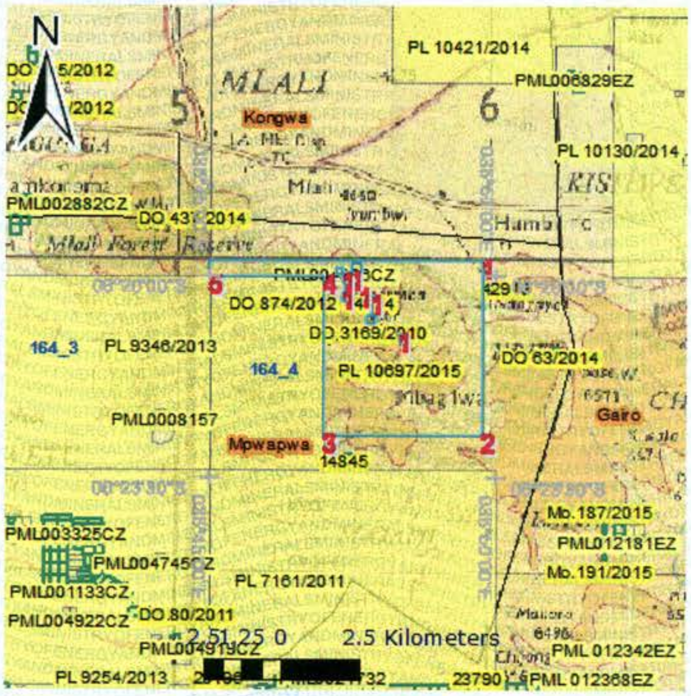
ANNEX A

DESCRIPTION OF THE LICENCE AREA

Subject to Section 95 of the Mining Act, 2010 the Licence is in **Mpwapwa** District, QDS **164/4** defined by lines of latitude and longitude having the following corner coordinates (Arc 1960):

Corner	Latitude	Longitude
1	- 06 deg. 19 min. 45.00 sec.	36 deg. 49 min. 45.00 sec.
2	- 06 deg. 22 min. 45.00 sec.	36 deg. 49 min. 45.00 sec.
3	- 06 deg. 22 min. 45.00 sec.	36 deg. 47 min. 0.00 sec.
4	- 06 deg. 20 min. 0.00 sec.	36 deg. 47 min. 0.00 sec.
5	- 06 deg. 20 min. 0.00 sec.	36 deg. 45 min. 0.00 sec.
6	- 06 deg. 19 min. 45.00 sec.	36 deg. 45 min. 0.00 sec.

With an exclusion of a valid licence PML No. 004331, 0004966, 004396CZ, 44774, DO 72/2012, DO 874/2011, DO 873/2010, DO 877/2012, DO 71/201, DO 3169/2010 and DO 3168/2010



Legend	
Licensed boundary	
Licence Code	**PL 10697/2015**
District	**Mpwapwa**
Direction	N

An area of approximately **29.04** Square Kilometres.

0005356

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF ENERGY AND MINERALS

ANNEX B

EMPLOYMENT AND TRAINING, PROCUREMENT PLAN OF GOODS AND SERVICES

1. The Licensee shall employ Tanzanian personnel with appropriate qualifications to the maximum extent practicable consistent with efficient operations.

2. Subject to Clause 1, the Licensee shall not be restricted in employment, selection, assignment or discharge of its personnel provided, however, that the employment and discharge or disciplining of personnel shall be carried in accordance with the generally applicable laws and regulations of the United Republic of Tanzania.

3. Subject to Clause 1 and to the requirement of any law relating to immigration, the Licensee and its sub-contractor(s) may bring into Tanzania such expatriate personnel as in the Licensee's judgement, required to carry out mineral prospecting operations efficiently and successfully and the Government shall expeditiously provide the necessary work permits and other approvals required for the employment of such expatriate.

4. The Licensee shall be abided by the procurement plan of goods and services available in the United Republic of Tanzania.

Licence PL 10697/2015

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

ANNEX C

PROSPECTING PROGRAMME AND FINANCIAL EXPENDITURE ESTIMATE.

Subject to Section 30 of the Mining Act 2010 and Regulation 8 of the Mining (Mineral Rights) Regulations 2010, the Licensee shall expend on prospecting operations in respect of the licence granted as per submitted prospecting programme and financial expenditure estimates approved by the Licensing Authority.

0005358

APPENDIX B
Certificate of Qualified Person

SRK Consulting (Canada) Inc.
Suite 2200 - 1066 West Hastings Street
Vancouver, BC V6E 3X2

T: +1.604.681.4196
F: +1.604.687.5532

vancouver@srk.com
www.srk.com

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Independent Technical Report for the Spring Stone Exploration Mpwapwa Copper Properties, Tanzania, Dated October 30, 2015.

I, Christopher Mark Barrett, residing in Vancouver, Canada do hereby certify that:

1) I am a Principal Exploration Geologist with the firm of SRK Consulting (Canada) Inc. ("SRK") with an office at Suite 2200-1066 West Hastings Street, Vancouver, BC, Canada.

2) This certificate applies to the technical report entitled: Independent Technical Report for the Spring Stone Exploration Mpwapwa Copper Properties, Tanzania effective October 30, 2015.

3) I am a graduate of the University of Wales - Cardiff, UK (in 1998) and obtained a Bachelor's of Science (BSc) with honours (Hons) degree in Exploration Geology (First Class). I am also a graduate of the University of Greenwich - London, UK (in 2004) and obtained a Master's (MSc) degree in Geographical Information Systems and Remote Sensing (Distinction). I have practiced my profession continuously since 1998 and my work experience since graduation has included the design, implementation and management of mineral exploration programs; minerals project evaluation; exploration data management, analysis and interpretation; fieldwork (including, prospecting, mapping, sampling, drill-rig supervision, etc.); writing best practice procedures; and writing compliant technical reports.

4) I am a Chartered Geologist (CGeol) registered with the Geological Society of London with membership number 1003738.

5) I have personally inspected the subject project between September 29 and October 02, 2015.

6) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

7) I, as a qualified person, I am independent of the issuer as defined in Section 1.5 of National Instrument 43-101.

8) I am the author of this report and responsible for all sections of the report and accept professional responsibility for those sections of this technical report.

SRK Consulting (Canada) Inc.
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vancouver@srk.com
www.srk.com

9) I have had no prior involvement with the subject property.

10) I have read National Instrument 43-101 and the technical report and confirm that this technical report has been prepared in compliance therewith.

11) SRK Consulting (Canada) Inc. was retained by Spring Stone Exploration Inc. to prepare an Independent Technical Reports for the Mpwapwa Copper Properties project. The report was completed using the Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of acquired data and communications with Spring Stone Exploration Inc. and Japan, Oil, Gas and Metals National Corporation personnel.

12) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Mpwapwa Copper Properties.

13) That, at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Vancouver, Canada
October 30, 2015

Christopher Mark Barrett, CGeol
Principal Exploration Geologist