GEOCHEMICAL CAPABILITIES IN TANZANIA

MWANZA FACILITY

SGS Minerals Services’ laboratory in Mwanza, Tanzania offers geochemical analysis to meet your mineral testing needs. We are part of the SGS global laboratory network that provides first-class geochemical analysis, including ICP-AES analysis, to mining and exploration companies throughout Africa and around the world.

Our Mwanza facility was developed to serve Tanzania, and to provide access to our extensive mineral testing services worldwide. All our labs use the same global testing methods, analytical codes, and sampling preparation techniques to ensure uniform excellence for you. Our Mwanza laboratory conforms to ISO/IEC 17025 standards for specific registered tests.

Through our Mwanza technicians, and those at our centers of excellence in South Africa and Canada, we support your exploration and mining efforts as a strategic partner and an independent analytical advisor. We act as your expert technical resource to facilitate the success of your mineral program.

ANALYTICAL SERVICES

The Mwanza laboratory maintains a broad suite of analytical techniques to suit your mineral testing requirements, including Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES). Our facility is equipped with the same standard quality control procedures that exist throughout our network of over 110 laboratories. Our technicians maintain high standards of quality and procedural excellence to ensure your data is accurate, repeatable, and timely. Mwanza’s on-site analytical capabilities include:

- Multipour fire assay ICP-AES (Au)
- ICP-AES multi-element packages (Table 1)
- Acid digest (Au)
- Accelerated cyanide leach (Au)
- Cyanide BLEG leach analyses (Au)
- Atomic absorption spectrometry (AAS) for some base metals.

The Mwanza facility has successfully completed the site and technical evaluation for conformance to the ISO/IEC 17025:2005 standard. The tests evaluated include determination of gold by multipour fire assay using SGS in house methods FAA 505 and FAA 303. This achievement demonstrates technical competency for a defined scope of tests and the operation of a laboratory quality management system. The accreditation program is monitored by the South African National Accreditation System (SANAS).
Additionally, the Mwanza lab functions as a complete sample preparation laboratory, reducing all samples to a pulp for ease of transportation. Samples can be shipped to any of our analytical centers of excellence located globally including Johannesburg, South Africa, and Toronto, Canada. Both facilities are accredited to ISO/IEC 17025 for specific registered tests.

**BENEFITS OF ICP-AES ANALYSIS**

ICP-AES is a powerful analytical technique that determines multiple elements quickly and concurrently. The instruments involved are widely accepted in the mining and mineral exploration industry as a rapid and cost-effective means of geological sample analysis. Further benefits include:

- All elements in an ICP package are determined in one pass, which minimizes your analysis time and sample consumption.
- ICP-AES instruments are very stable and thus long-term variability is minimal, allowing for extended automated runs using sample changers.
- The large linear response range of ICP-AES minimizes the number of calibration standards and the amount of sample dilution required.
- There is minimal spectral interference between elements.
- Virtually all the metallic elements, including rare earth elements, and the non-metallic elements S and P can be determined.
- Your results are precise and accurate ranging from ppm to percent concentration levels for the same solution.

Typically, your reconnaissance samples (or regional soil samples) are analyzed by aqua regia digestion followed by a multi-element ICP-AES analysis for base metals, trace and lithological elements. Core from follow-up drilling, and rock samples are generally analyzed by a multi-acid or fusion digestion followed by a multi-element scan. Where metal contents are high (or ore grade), your samples may require further testing.

**MMI CAPABILITIES**

At these main facilities, we can provide you with the full breadth and depth of our analytical capabilities, including Mobile Metal Ion Geochemistry (MMI™) for your early stage exploration efforts. From our Mwanza facility we can prepare and ship your MMI™ soil samples to our main labs for analysis. There the metal ion concentrations are measured in the parts per billion, which produce very sharp responses (anomalies) directly over mineralized orebodies at depth.

**OUR COMMITMENT TO YOU**

SGS Minerals Services is committed to providing you with fit-for-purpose geochemical analysis designed to match your precision and accuracy requirements. Our Mwanza facility is staffed with experienced technicians who can help you determine the optimum analytical package for your needs. Using state-of-the-art equipment and consistent, industry-leading methodologies, our professionals will provide you with bankable geochemical results you can rely on.

**CONTACT INFORMATION**

Email us at minerals@sgs.com
www.sgs.com/mining

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**Table 1: Multi-element analyses now available at the Mwanza Facility**

<table>
<thead>
<tr>
<th>SGS PACKAGE</th>
<th>ELEMENTS ANALYZED</th>
<th>DIGESTION</th>
<th>INSTRUMENTATION</th>
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<tbody>
<tr>
<td>ICP12B</td>
<td>36</td>
<td>2ACID</td>
<td>ICP-AES</td>
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<tr>
<td>ICP40B</td>
<td>32</td>
<td>MULTI-ACID</td>
<td>ICP-AES</td>
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