

## Lonshi, Mwenso

### Katanga, Zambia

Main commodities: Cu

The **Lonshi** (or **Mwenso**) sediment hosted copper deposit is located in the Province of Katanga, Democratic Republic of the Congo, within 3 km of the international frontier, and ~ 40 km SE of the town of Ndola, across that border in Zambia (#Location: 13° 10' 38"S, 28° 56' 26"E).

#### Regional Setting

Lonshi lies towards the southeastern extremity of the Zambian Copperbelt. For background and location, see the separate [Zambian Copperbelt](#) record.

#### Local Geology and mineralisation

The Lonshi deposit is located in flat terrain, with an average elevation of 1300 m a.s.l. The area is vegetated with a mixture of open savannah grassland, tropical forest and marsh. Outcrops are very sparse, with deep tropical weathering and ubiquitous laterisation, with the local geology largely interpreted from satellite imagery and drilling. The stratigraphic succession in the mine area comprises eastward dipping Lower Roan Subgroup clastic rocks, overlain by Upper Roan Subgroup pelitic, carbonate and minor clastic rocks, which in turn, are succeeded by Mwashia Subgroup shales.

The mineralisation at Lonshi is interpreted to occur at or near the upper contact of the Upper Roan Subgroup, where a sheared and tectonised clastic unit, the Lonshi Conglomerate, is in thrust contact with overlying carbonaceous, silty, dolomitic marbles. This folded and thrust contact, known as the 'Lonshi Horizon', is the locus for mineralisation which occurs in both the conglomerate and the intensely weathered dolomite (Stephens and Newall, 2003).

The primary sulphide mineralisation is predominantly chalcopyrite, which occurs as carbonate clast replacement in the conglomerate, and as disseminations and rare veinlets in both the conglomerate and dolomitic marble. Deep oxidation and supergene processes, have resulted in complete carbonate destruction in the dolostone within the weathering zone, and formation of a zone of chalcocite enrichment, which is now largely oxidised to malachite and black Cu oxide minerals. The weathered dolostone has been reduced to a residual black silty rock, termed Terre Noir, that is host to major secondary oxide mineralisation. At depth, carbonate destruction of the dolostone is incomplete, and the Terre Noir then forms along the upper and lower dolostone contacts only (Stephens and Newall, 2003).

The Lonshi deposit has been traced over a strike length of 2500 m and drilled to a maximum depth of 150 m. The oxide mineralisation is developed over a thickness of from 2 to 50 m, with ore grades and mineable thicknesses being confined to a synclinal fold flexure. In 2003, similar synclines were mapped to the north and south of the Lonshi deposit but had not been drilled (Stephens and Newall, 2003).

The Lonshi oxide ore body was depleted by August, 2008, but hypogene sulphide resources remain.

Pre-mining JORC compliant reserves and resources were (Stephens and Newall, 2003):

Mineral resources (high + low grade ore)  
 Measured resource - 6.9523 Mt @ 5.01% Cu Total, 4.22% Cu Acid Soluble,  
 Indicated resource - 0.3101 Mt @ 5.07% Cu Total, 4.28% Cu Acid Soluble,  
 Inferred resource - 0.1522 Mt @ 5.07% Cu Total, 4.28% Cu Acid Soluble  
 Measured + indicated resource - 7.2624 Mt @ 5.01% Cu Total, 4.22% Cu Acid Soluble  
 Ore reserves (high + low grade ore)  
 Proved + probable reserves - 4.0842 Mt @ 6.48% Cu Total, 5.34% Cu Acid Soluble

This summary has been drawn from: "Source: Stephens, A.J. and Newall, G.C., 2003 - *The Lonshi Copper Mine, Katanga Province, Democratic Republic of the Congo, a NI 43-101 Technical Report prepared for First Quantum Minerals Ltd., 35p.*"

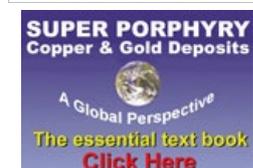
The most recent source geological information used to prepare this summary was dated: 2003. Record last updated: 26/11/2015

This description is a summary from published sources, the chief of which are listed below.

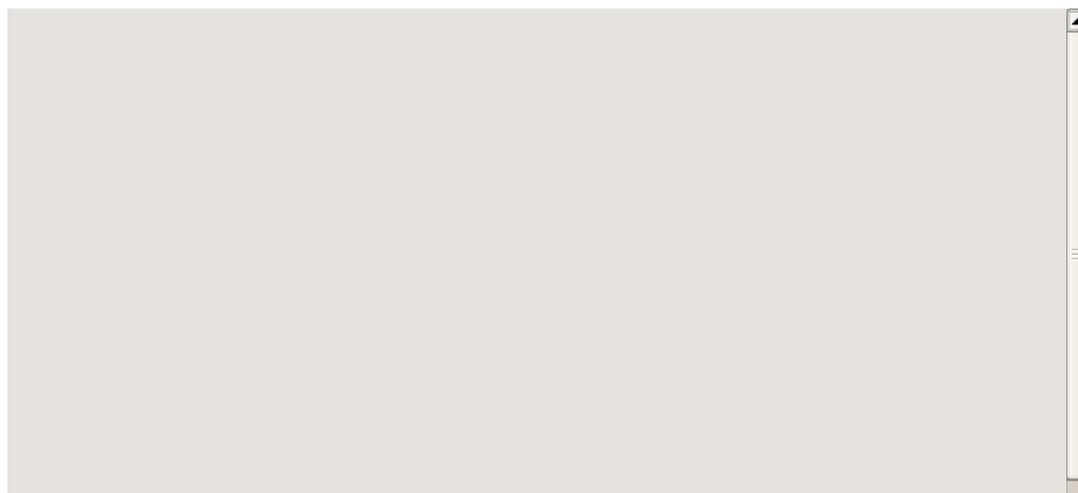
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