

GEOLOGICAL REPORT ON DETAILED  
EXPLORATION FOR COPPER ORE IN  
**SATKUI BLOCK (PHASE-I)**  
**SOUTH KHETRI COPPER BELT**  
**DISTRICT- JHUNJHUNU, RAJASTHAN**

EXECUTIVE SUMMARY



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**CENTRAL ZONE**  
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**GEOLOGICAL REPORT ON DETAILED EXPLORATION FOR  
COPPER ORE IN SATKUI BLOCK (PHASE-I),  
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**EXECUTIVE SUMMARY**

**1.0 LOCATION**

Satkui block is located at a distance of 35 kms from Khetri Copper smelter and 2 Km east of Basari village. It falls in Survey of India Toposheet No. 45 M/9 (Lat. N27°49'00": Long. E75°34'00"). The nearest railway station Neem-ka - Thana is at a distance of 50 Kms from the block

**2.0 GEOLOGY, STRUCTURE**

The Satkui area forms a part of western limb of a major anticline with massive Quartzite, Quartz-Sericite-Schist, Carbonaceous phyllites, shaly phyllites, cherty quartzite etc., as rock types encountered in the boreholes belonging to Ajabgarh formation of Delhi Super Group. The rock types strikes N50°E-S50°W and dip at 50°-70° due NW. The major structure is strike fault developed along the contact of massive hard quartzite and phyllitic quartzite mostly dip slip type. The fault/shear zone can be traced from Satkui to Raghunathgarh over 25 kms length towards Southwest. The fault strikes N60°E-S60°W with 65° northwesterly dips. The fault/shear zone at Satkui is marked by silicified fault breccia capped by gossans and is developed in the carbonaceous phyllite.

**Stratigraphic Succession and Rock types of the Area**

Recent		Alluvium and aeolian sands
Delhi Super Group	Ajabgarh Group	Phyllitic quartzite & Sericite Quartz Schist Sheared carbonaceous phyllites containing Silicified breccia and sulphide mineralisation Hard massive quartzite Schistose quartzite

(After GSI)

**3.0 MINERALISATION:**

The surface manifestation of copper mineralization is in form of discontinuous gossanised / oxidized zone on surface throughout over a strike length of 400m and number of old workings are shallow shafts (23 nos.) are seen in the oxidized zone. These shafts had been sunk upto 440mRL i.e. 30m depth from surface. Sub-surface exploration by drilling has established mineralisation in sheared carbonaceous phyllites/Qtz-Chlorite-Sericite schist with sulphides is occurring as rich segregations, along fracture, cavity/Geode/Vugs and breccia fillings. The ore

body is fairly continuous with pinch and swell type and plunging 13° in S48° W direction.

#### **4.0 QUANTUM OF WORK DONE**

MECL has carried out detailed Geological Mapping & topographical survey covering 1.50 Sq.km. area. 3746.60 Mtrs of drilling in 12 boreholes, 660 Nos number of primary and check samples for copper & 71 for Fire Assay of Au, 12 Nos of composite samples for Copper, 12 Nos for Ni, Co & Mo and 12 Nos for Fire Assay of Au & Ag. 12 Nos. of composite samples for Emission Spectroscopy (10 radicals) and for XRD studies, Petrographic studies on 32 Nos.of samples and Minerographic studies on 32 Nos of samples and 40 Nos of specific gravity determination test were also carried out by MECL in the Block. One sample of borehole core was prepared for Beneficiation studies and sent to I.B.M. Nagpur. Based on the above data and earlier data of GSI, an exploration report was submitted by MECL.

#### **5.0 ORE RESERVE ESTIMATION**

The data thus obtained from the boreholes drilled by MECL during the current phase of investigation after justifiable extrapolation considering the actual core condition, the true width has been estimated. The grade established based on 0.5% Cu cut-off after chemical analysis have been considered for preparation of this report. The grade as well as thickness may vary once the deposit is put into exploitation.

The data of boreholes and drilled by GSI and MECL in Satkui block combinedly formed the database for this report. The reserves are estimated by cross section method on 0.20% Cu cut-off, and on 0.50% Cu cut-off with 1.50 m minimum stopping width (MSW) and 3.00m minimum parting

The reserves estimated at 0.50% Cu cut-off is 3.332 million tonnes with 1.22% Cu.

The reserves estimated at 0.20% Cu cut-off swells to 4.493 million tonnes with 0.96% Cu.

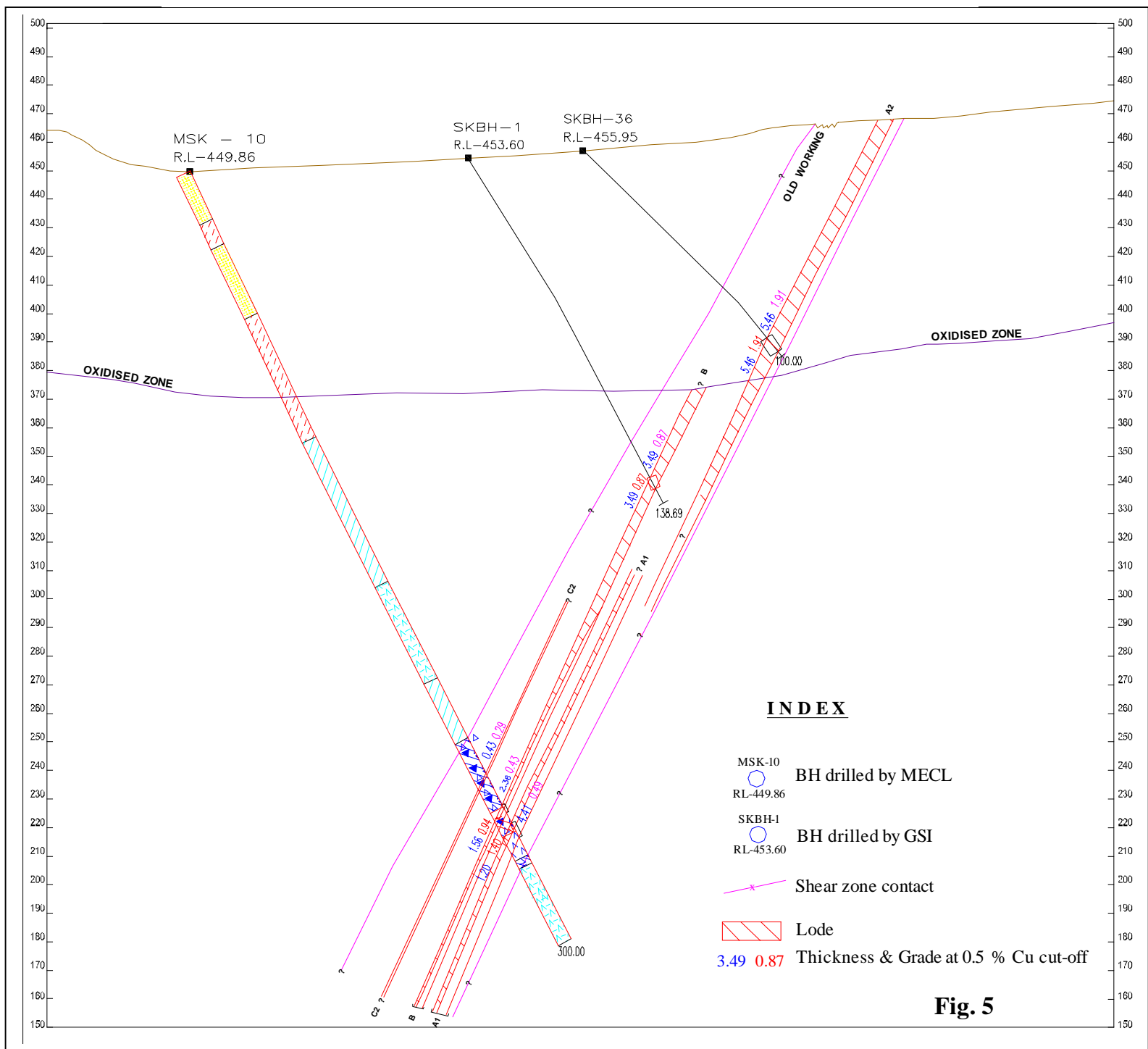
**The Deposit has been classified as Category 'C' of UNFC 332.**

The studies on the baseline data of Environmental studies covering land use / land cover pattern studies have been carried out in the block.

**The Total Cost of Exploration is Rs. 281.51\_? Lakhs.**



# GEOLOGICAL CROSS SECTION



**Fig. 5**

# LEVEL PLAN AT 300 mRL

