**Base Metals**

**Base metals** comprise the non-ferrous metals copper (Cu), lead (Pb), zinc (Zn) and nickel (Ni). The majority of world copper production comes from >1000 Mt porphyry deposits in South America, Indonesia and the USA. Zinc and lead are commonly exploited together from volcanogenic massive sulphide (VMS) deposits which may also contain copper and gold. Nickel is exploited from magmatic intrusions and from lateritic weathering of nickel bearing rocks.

The major applications of copper are in electrical wires, roofing/plumbing and industrial machinery. Major uses of lead include production of storage batteries, roofing, radiation shielding, ballast and ammunition. The majority of zinc is used in galvanising iron and steel to prevent oxidation, with lesser amounts used for alloying other metals.

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**SRK ES offers:**

**Experience** in completing audits of exploration programmes for Ni-sulphide deposits in Finland, Ni-Cu-PGE bearing intrusions in Kazakhstan and Cu-Pb-Zn skarn deposits in Turkey. SRK ES has been involved in exploration for porphyry deposits in Afghanistan and Egypt, and undertaken a high-level analysis of base metal prospectivity across the Tethyan Metallogenic Belt. Geophysical surveys have been completed in Oman and Mauritania during the evaluation of VMS and IOCG deposits respectively using magnetic, electromagnetic and induced polarisation (IP) techniques.

**Knowledge** of base metal deposit mineralisation. Base metals often form sulphide minerals and can be identified by resistivity and IP geophysical surveys following regional prospecting and preliminary target generation.

**Expertise** in the application of exploration methods appropriate to the deposit type being investigated. Geochemistry, alteration patterns and geophysical signatures can be markedly different for different base metal deposits; and as such SRK ES’ wide-ranging experience provides depth of insight into such variation and the ability to plan exploration programmes accordingly.

**Innovation** and adaptability, being one of the ‘first movers’ in the minerals sector in Afghanistan following years of inactivity. Novel approaches to conventional exploration programme design are being developed to ensure the safety of personnel and the rapid reconnaissance and identification of new, potentially world-class mineral deposits through project specific, robust and targeted exploration campaigns.

Base metal exploration involves the investigation of geochemical anomalies and mineral occurrences by mapping and sampling, the identification of deposit type, and creation of a deposit model using geophysics and drilling. SRK ES is well versed in recommending, designing and undertaking all of these aspects, is able to advise at a corporate level on exploration strategy and can report results in line with international reporting codes.

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**To find out more about our technical services or discuss your project specific needs, please contact us:**

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