» CASE STUDY

# Dexing, China (Jiangxi Copper Co.)

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| **PROJECT OBJECTIVES** | Wastewater treatment and copper recovery from acid mine drainage, solvent extraction raffinate and other sources. |
| **PROJECT SIZE** | · 24,000 $m^3$/day flow<br>· production capacity of up to 3.6 million lb Cu annually |
| **TECHNOLOGY** | ChemSulphide® plant |
| **COST** | $3.6 million Cdn (2007) |
| **RESULTS** | 2009 Operating Results<br>· 5.5 million $m^3$ of water treated<br>· 1.7 million lbs of Cu recovered<br><br>2010 Operating Results<br>· 5.0 million $m^3$ of water treated<br>· 1.9 million lbs of Cu recovered |

The Dexing plant recovers a high grade copper product that is sold to offset water treatment costs; the treated water is re-used at the site.

BioteQ's Dexing operation removes dissolved ferric iron and copper from wastewater.

*The Dexing Plant is the recipient of the 2008 China Mining Environmental Protection Award.*

BioteQ operates a plant at the Dexing Mine in joint venture with Jiangxi Copper Company, recovering copper using BioteQ's ChemSulphide® process. The plant treats wastewater produced by drainage from waste dumps and low grade stockpiles, removing copper and ferric iron. A new ion exchange circuit has been added to remove nickel and cobalt; it is expected to come online in the first half of 2011. The treated water is re-used at the mine site. The plant has a water treatment capacity of 24,000 $m^3$/d and has an annual production capacity of up to 3.6 million pounds of copper.

BioteQ's water treatment processes deliver lower life cycle costs for water treatment and enhance environmental performance. In 2009, the Dexing plant treated 5.5 million $m^3$ of water and removed close to 1.7 million pounds of copper from the environment. The plant also generated revenues from copper sales of over $4.1 million, resulting in an operating profit of $1.9 million, ensuring that the water treatment plant is both economically and environmentally sustainable.

The plant improves overall site water and wastewater management and protects an important wetland from heavy metal pollution. BioteQ has also assisted the owner with the design and operation of two high density sludge lime plants on the large site.

BioteQ provided process design, oversaw plant construction, provided commissioning and training, and continues to provide ongoing operating services at the site on behalf of the joint venture.

*Figure 1: Dexing Process Flowsheet*