

# Treatment of Russian tailings given a boost

DIEMME FILTRATION RECENTLY supplied six large-format GHT 4x4 pressure filters to the Olimpiada gold operation in northern Siberia, which is owned and operated by ZAO Polyus.

The filters are used to dewater flotation concentrate, biological leach tailings and cyanide leach tailings.

The biological leach tailings filters are designed to remove soluble copper and iron by cake washing and blowing before the solids are discharged. The same processes are used to remove cyanide from the cyanide leach tailings.

## Progress made

The design and development of the Diemme GHT 4x4 pressure filter has led to the application of pressure filter technology in dewatering mine tailings.

The key features of the design allow huge filtration areas to be accommodated in a single machine (typically 1,000 to 1,500 square metres), minimising the number of units required in a single duty.



*Diemme's contribution to the circuit has been significant.*

Previously, the number of pressure filters required for a typical tailings filtration duty was economically prohibitive so the technology was rejected. Over the last five years Diemme has built an impressive list of tailings installations and is now known for building the largest pressure filters in the world.

The GHT 4x4 design's most important features are the four hydraulic rams that hold the plate pack together, working in tension when closed, and the overhead beam containing the fast 'carousel' plate-shifting mechanism.

These features allow large numbers of filter plates to be installed in a single machine and enable the plates to be moved very quickly thus minimising cake discharge time.

The filters are equipped with automatic

cloth washing systems that use low volume, high pressure nozzles, washing each cloth thoroughly. Such a washing system maintains the filtration rate and extends cloth life.

Successful pressure filtration of mine tailings requires extensive sampling and testing of the material before designing and sizing the filters.

## Best practice

Diemme's laboratory is equipped with the latest analytical tools to enable precise characterisation of the feed slurry. The particle size and shape are examined carefully as these can provide clues to the filterability even before filtration tests are begun.

X-ray fluorescence and infrared spectroscopy are used to help measure cake washing efficiency when valuable products or harmful contaminants are required to be removed from the filter cake before cake discharge.

Diemme Filtration's headquarters and manufacturing centre is located near Bologna in northern Italy, where it started in 1923.

The company now has more than 6,000 installations serviced by offices and representatives world-wide. Diemme (Asia Pacific) is located in Melbourne, Australia.

## OIL & GAS GAZETTE

PUBLISHED CONTINUOUSLY SINCE 1966



The monthly Oil & Gas Gazette is the best source of petroleum news and information in Australia. Its experienced journalists cover oil and gas exploration and production, pipelines and shipping, world markets, stock exchange activity and conferences, plus in-depth features on new projects and established fields and topical comment and profiles on prominent industry players.

One year subscription (11 issues) aimed at within Australia \$148 overseas \$288

Subscribe at our website  
[www.riu.com.au](http://www.riu.com.au)

Telephone 08 9382 3955 Facsimile 08 9388 1025  
Email [subscriptions@riu.com.au](mailto:subscriptions@riu.com.au)