



ENERGY OPTIMIZATION THROUGH SIMULATION

As mining techniques evolve into the 21st century, energy optimization efforts are showing incredible returns. Analyzing mining subsystems in a virtual world in order to achieve maximum potential and savings is effortless with Flownex® SE.

SIMULATE, PREDICT, AND SAVE ON THE FOLLOWING SYSTEMS:

WATER & SLURRY SYSTEMS

Determine the pressures and support loads generated by pump trip water hammer.

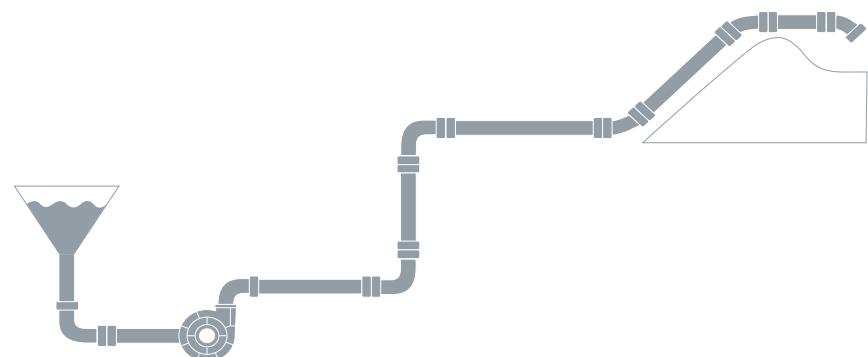
Identify the sections in a slurry pipeline that have the highest risk for blockage.

Estimate the minimum speed for a slurry pump to guarantee effective flow through a slurry network.

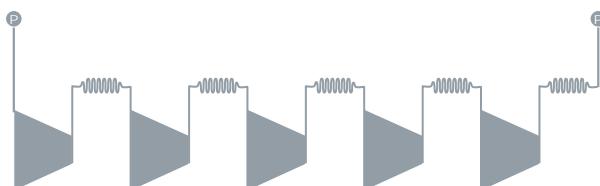
Size pipes or spray nozzles in a network to obtain an even flow distribution.

Design or assess modifications to water distribution or mine dewatering systems.

Minimize pumping system life cycle cost by selecting the best match of pump and pipeline size.



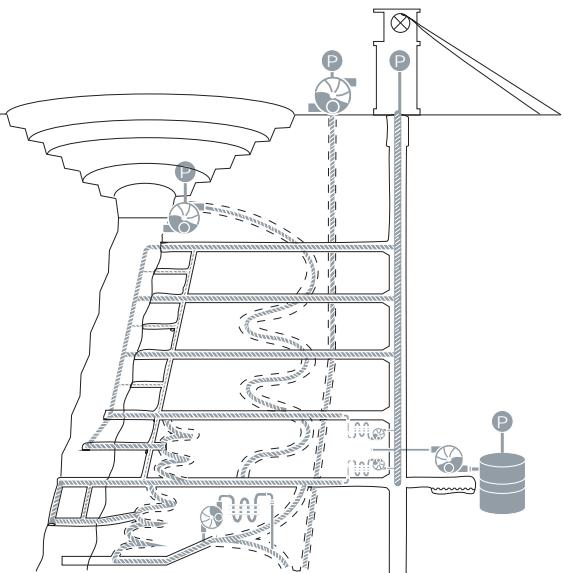
COMPRESSED AIR



Size pipes for providing a certain required compressed air flow.

Calculate the number of rockdrills that can be supplied by the pipe infrastructure.

VENTILATION



Calculate required fan power to circulate air through a mine.

Calculate wet bulb temperature and relative humidity with heat loads, cooling and pressure as inputs.

Assess flow path modifications to an existing system.

Size the refrigeration plant to obtain desired environmental conditions underground.

Calculate the performance of water-based refrigeration with interaction between air and water.

Calculate diesel exhaust fume levels for various flow rates and number of machines.

AWARD WINNING SIMULATION SOLUTIONS:

Jean's compressor and pipe optimization project used Flownex® to analyze the first complete air-compressor system and network of the mine. This allowed AngloGold to identify operational problems and opportunities to improve in operational efficiency. In essence the most efficient air compressors are run at their optimum efficiencies to match the total compressed air requirements. Implementation of the proposed solution led to significant energy and cost savings. The savings is estimated to be more than 2.5 MW with more savings expected as the system is further optimized with support from Flownex®. The cost of implementation of the project was minimal, thus giving AngloGold Ashanti an excellent return on investment.

Jean Greyling @ AngloGold Ashanti wins an ETA (Energy Efficiency) award using Flownex®

QUOTES / TESTIMONIALS:

“

Flownex® gave new meaning to complex systems fluid flow analyses in our company.

Chris Coetze
MBA, Pr.Eng.
Managing Director
Resonant RSA

”

"Flownex® stands out amongst its peers as a software suite that enables you to utilize it as a hydraulic fluids analysis tool appropriate for the application and engineering level you are designing and assessing. Two aspects set it apart for me: One - that the API code enables you to utilize the solvers together with Excel to provide you with a fully customized tool set that inputs and outputs the data required for the engineering analysis that you need - not necessarily even what the developer have integrated or intended - we are engineers after all. Thus it allows you to analyze multiple combinations and permutations of system arrangements quickly to meet operational or consulting objectives.

Secondly, the layout of the interface means the simulation engineer can easily convey scenarios and ramifications to operator and management alike. What has the potential to be rather overwhelming and complex becomes graphically clear, practically identifiable and consequently appreciated. As a pumping and piping engineer in the mining industry - who wants to improve the efficiency, simplify complex operation, increase safety and communicate the results effectively - Flownex® is a tool I have used to develop reliable designs and improve pumping systems to accommodate the ever changing nature of mining operations."

Alistair Baty Pr.Eng.
Engineering Manager
Paterson & Cooke USA

FLOWNEX® LICENSE HOLDERS

SASOL
reaching new frontiers



ANGLOGOLD ASHANTI

ANGLO AMERICAN

RESONANT
ENVIRONMENTAL TECHNOLOGIES



www.flownex.com | sales@flownex.com

Follow us on Facebook, LinkedIn, Twitter and Youtube

