



Heap Leaching Operations Optimisation

Our extensive experience in heap leaching enables us to assess heap leaching practices and operations effectively and accurately. Our expert knowledge facilitates the comprehensive review and upgrading of production modelling, metallurgical accounting, and operational practices. The process guides clients through an audit of their site to identify and investigate new metallurgical methodologies and practices to improve on-site recovery.

Heap Leaching Services

- Flowsheet development from Concept Studies through Detailed Engineering
- In-house laboratory metallurgical and tailings management testing
- Geometallurgical determinations of optimised ore routing and processing
- Advanced, predictive heap leach production modelling
- Commissioning support for new leach pad facilities
- Process optimisation (debottlenecking) and upgrade opportunities
- Site feed trials
- Operator training
- Process auditing, including a focus on Cyanide Code and safety compliance
- Qualified Persons (QP) for technical reports

Leaders in Process Engineering

At Paterson & Cooke, we have a team of process engineers with extensive operational heap leach experience supported by our expert team of metallurgists offering a wide variety of project experience.

Our expertise in the field of mineral processing spans the breadth of services from comminution through tailings. This, coupled with our in-depth knowledge of rheology, clay chemistry, and slurry and solution flow behaviour, enables us to provide clients with unique, more creative, and more definitive mineral process solutions.

Our engineering is backed by in-house laboratory testing to assist in providing cost-effective and operationally robust solutions.



Case Studies:

SSR Mining – Marigold, Nevada, USA

Site Audit and Solution Management

The team at Marigold operates a large run-of-mine heap leach operation in Humboldt County, Nevada. We conducted a site audit including a review of current leaching operations and placement estimation methodology, to provide assurance of the estimate and identify any potential areas of improvement. We identified opportunities to improve solution management and production modelling protocol, and performed an economic assessment of planned plant upgrades and expansions to address this.

Calibre Mining - Pan Mine, Nevada, USA

Operational Review and Production Modelling

The Pan mine is a gold heap leach in east-central Nevada. We conducted a review of current leaching operations and support for improving current production modelling and metallurgical accounting procedures. We performed an in-depth analysis of current and historical metallurgical data and designed a new heap model to streamline data input and analysis for more accurate, readily available inventory estimation.

McEwen Mining - Gold Bar, Nevada, USA

Startup and On-Site Operational Support

We provided assistance in the start-up, stabilisation, and optimisation of McEwen Mining's Gold Bar heap leach pad in Nevada. We assisted with a site audit, including a review of current leaching operations and placement estimation methodology, to provide assurance of the estimate and identify potential areas of improvement. We identified opportunities to improve solution management and production modelling protocols, and performed an economic assessment of planned upgrades and expansions. Personnel were also retained, on an interim basis, to provide direct oversight of operations while hiring replacements for key process staff was underway.



Group Capabilities

Tailings & Mine Waste
Long-Distance Pipelines
Mine Backfill
Mineral Processing
Mine Services
Bulk Water Supply
Dredging & Marine Pipelines
Laboratory & Test Work
Engineering Services

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