

# ALUMINIUM



# SERVICES

The Millcreek Mining Group is affiliated with Millcreek Engineering, an integrated engineering company serving the energy and resources industries. We provide support at every stage of project development ranging from geologic and mining consulting services through detailed engineering, procurement and construction management (EPCM).

An understanding of our client's needs coupled with effective management and a streamlined corporate structure allows us to provide an excellent and highly competitive service to the mining and natural resources sectors. Our professionals have served as senior management and technical staff at operating metals mines and have had management, operational and consulting experience in the mining industry.

**Our professionals have worked on a variety of bauxite and alumina projects, on both karst and lateritic deposits. We have project experience in all aspects of the upstream aluminium industry covering, bauxite resource modelling and estimation; mining facilities and infrastructure engineering; material handling and bauxite beneficiation; bayer process engineering; alumina filtration and calcination; power plant operations; and alumina refining and smelting.**

## Services

We can provide the following services in the following areas:

- Exploration management
- Geologic resource modelling and estimation
- Operational improvement, optimization and benchmarking
- Mine planning and design
- Economic feasibility studies
- Comminution and milling
- Minerals beneficiation and processing
- Extractive metallurgy
- Material's handling, transportation and storage
- Reclamation and closure planning

Millcreek Mining Group principals, consultants and partners have prior experience in the following representative projects.

# REPRESENTATIVE PROJECTS

## **Alunorte Refinery, Brazil**

### ***Senior Consulting***

Lead team in performing a "Peer Review" of the FEL3 Engineering Study of a bauxite beneficiation and alumina refinery in Brazil with Brazilian Eng. Co. Also provided technical advisement to KFW & bank consortium on Alunorte expansion.

## **Companie des Bauxites de Guinee (CBG)**

### ***Resource Certification***

Served as Competent Person for JORC-compliant resource estimation and preparation of an Independent Technical Report.

## **Companie des Bauxites de Guinee (CBG)**

### ***Senior Management***

One of our Senior Consultants in aluminum previously held senior management positions at CDG, including serving as Director General and Chairman of the CBG Commercial Committee.

## **Billiton International Metals**

### ***Senior Management***

One of our Senior Consultants in aluminum previously served as Head of mining and metallurgy including board-level responsibility for bauxite mines, alumina refineries, and aluminum smelters.

## **Section Commissioning Coordination**

Responsible for the commissioning of one of the world's largest alumina refineries. Supervised training of operational staff and preparation of training material.

## **Mineração Rio do Norte (MRN)**

### ***Technical Committee***

Key role, on behalf of Alcan, on the technical committee of one of the largest bauxite mines in the world.

## **NALCO & BALCO, India**

### ***Senior Consulting***

Provided due diligence and technical support for the privatization of some of the largest aluminum produces in India..

## **Rio Tinto Alcan**

### ***Principal Technical Advisement***

Provided technical leadership, commitment and sharing of practical experience. Participated in the approval and commissioning of a new natural gas supply system, delivering significant safety improvements and energy savings 30% higher than expected. Provided preparation and technical coordination of the major turnaround of a grinding mill with the support of an international taskforce, delivering an unexpected increase in production capacity. Participated in the expansion of the Yarwun refinery in Australia, providing diagnosis, problem solving, planning, training and operational maintenance. Participated in the Gove expansion. Assumed leadership of ten training and problem-solving missions in China, Dubai, France and India.

## **General Bauxite Expertise**

Members of our team have carried out reviews on potential and existing bauxite operations in a number of countries, and have authored JORC and NIO 43-101-compliant technical reports on resource estimations. Our work, alone, or with the assistance of engineering companies, involved due diligence, review of resources and infrastructure, selection of plateaus for drill programs, definition of drill programs, sample preparation, assistance with bauxite process testing and analyses. Members also provided market analysis and opinions as to the viability of the mine for the purpose of exporting bauxite or for the purpose of justifying construction of a local refinery

## **General Alumina Expertise**

Our team has provided reviews on potential and existing alumina refineries in a number of countries. Our team includes world-class refinery designers, senior managers and operations managers who have spent 30 or more years involved with Alumina refineries. We conduct due diligence, troubleshooting, training, market analysis, expansion studies and Greenfield design. We also have our own proprietary model for simulating the steady state conditions and design performance of any Bayer-Process alumina refinery.



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GROUP

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