

KIDD MINE PASTEFILL PLANT OPERATION



HIGHLIGHTS:

DESCRIPTION:

Paste plant design, build and operations

OPERATIONS

Plant operates at 90% capacity

LOCATION:

Timmins, Ontario
(cold weather environment)

CLIENT:

Glencore Inc.

ENGINEER:

Golder & Associates

GENERAL CONTRACTOR:

BMH

PRODUCT SUPPLIED:

\$1.4 M Tonnes paste backfill per annum

THROUGHPUT:

400-500 Tonnes (168-210 m³) per hour

CONSTRUCTION:

2003

ESTIMATED PROJECT COMPLETION:

2019

THE PROJECT

The Kidd Mine, owned by Glencore Inc. is the world's deepest copper/zinc mine and second largest user of cemented backfill. It is located near Timmins Ontario. Lafarge was initially involved designing, building and operating an on-site ready-mix concrete plant for the deep mine expansion project. The ready-mix plant remains on-site to supply subsequent development projects and to meet day-to-day concrete and shotcrete requirements.

ORIGINAL PASTEFILL PLANT DESIGN OVER-BUDGET

The mine received a paste plant design that was considerably over its budget, and so looked for other options. They engaged Lafarge in the paste plant design process because of the exemplary technical expertise we showed in the design and operation of the ready-mix plant. The ready-mix plant had the unique logistical challenge of supporting multiple bore holes. In addition to operating the pastefill plant, Lafarge also provides a custom designed cementitious Terraflow 90™ and manages other backfill support services including processing and delivery of sand and tailings.

NEW SMARTER PLAN

The Lafarge team created CAD drawings focused on lifetime cost analysis and reducing long-term operational costs of the plant. The budget developed from our drawings was significantly lower than the one Kidd Mine initially received. The backfill paste plant would



be set up directly above the mine boreholes, which eliminated trucking and handling costs. The added efficiency of a continuous feed system would save time and optimize underground labour costs. The mine team was impressed, and so decided to proceed with Lafarge's vision.

TURNKEY PASTEFILL PLANT

Lafarge reached out to preferred suppliers to form a consortium to design, engineer and build and commission a turnkey plant. We engaged a general contractor with extensive cold weather construction experience. After the final commissioning, Lafarge was contracted by the mine owner to operate the pastefill plant.

SUCCESSFUL OPERATION

Lafarge has operated the pastefill plant since 2004. Over time the operational capacity has expanded resulting in increased reliability, decreased cost per tonne, and greater throughput. Lafarge's backfill support services including processing and delivery of sand and tailings resulted in significant cost savings for the mine. Lafarge also provided a custom designed pastefill - TerraFlow™ 90. Annually, we produce approximately 1.4M T of paste backfill which flows down surface boreholes up to 9,500 ft (2895m) deep.

Lafarge contributed to reducing the mine's environmental footprint by processing and recycling mine tailings.

Lafarge provided paste backfill plant design, setup, support and operation to allow the mine to focus on its energy on ore extraction.

The success of this project was certainly made possible by the many individuals within Lafarge who contributed their expertise in their own field. As a team, we worked very well with the mine owner and the other key stakeholders to make this pastefill plant a reality. Its subsequent success has been very gratifying.

Jeff Kerr
Operations Manager,
Lafarge Projects & Key Accounts

Lafarge comes in as a subject matter expert to operate a fairly complex system for us." "One of the key benefits for me is the ability for me to concentrate on my key deliverables which is mining ore from underground.

Shannon Campbell
Manager, Kidd Mine



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