Case Study

ITT | GOULDS PUMPS

ITT Goulds Pumps XHD Solutions: Mill Discharge Application

XHD delivers reliable performance and reduced Total Cost of Ownership at a Silver Mine in Mexico

Project Technical Data

Application: Oxides/Sulfur Slurry Mill Discharge	Slurry Type: Silver Ore Cyclone Feed
Flow Rate: 680 gpm (155 m^3/hr)	Slurry: 1.35 SG & C_w = 40%
Total Head: 58.5 ft (17.8 m)	Duty: 820 RPM, 62% efficiency & 20.5 bhp
Pump: Goulds **125 XHD**	Construction: HC600 Liners & Impeller
Drive Arrangement: Overhead Motor Mount, V-Belt Drive & 50 HP, 1,200 RPM Motor	

Goulds XHD solution for a difficult mill discharge application

In March 2011, a plant operator of a silver mining and processing facility in Northern Mexico expressed a concern with the slurry pumps he was using for mill discharge service. The pump liners and impeller were wearing out in eight to ten weeks, requiring frequent parts replacement and reducing production.

These pumps on the secondary grinding circuit are critical to proper operation of the plant because the cyclone overflow from the pump discharge is sent downstream for further processing. Reduced wear life and frequent rebuilds were decreasing uptime and resulting in lost production and profitability.

ITT Goulds Pumps reviewed the application details and proposed the new 125 XHD pump with HC600 liners and impeller. The compact pedestal made it easier to install the pump in the current location with the use of an adaptor base to line up the pump suction flange with the piping. The customer opted to make the adaptor base in house.

Goulds 125 XHD pump installed on oxides/sulfides slurry mill discharge at a silver mine in Northern Mexico. The customer built the adaptor base under the pump in order to align the pump flange with the suction piping.

The ITT family of industrial brands includes:

GOULDS PUMPS | Bornemann Pumps | Engineered Valves | PRO services | Blakers | Leat

Goulds XHD challenge

The customer had advised that the liners on the existing pumps were wearing out in 1,400 hours, the impeller in 1,000 hours, and the suction wear plate and shaft sleeve in 700 hours. The customer desired to extend the wear life by 50% for better availability of the pump and reduced downtime. With this goal in mind, it was agreed to establish a target of 2,000, 1,500 and 1,000 hours, respectively, for these wear components.

Goulds XHD Performance

The 125 XHD pump ran intermittently from September through November 2011. The pump operated continuously for 5,760 hours (35 weeks) from November 2011to July 2011. During inspection in July, it was noted that there was very little wear on the pump components. The pump was reassembled with the original components and put back into service. In August 2012, it was again opened up for inspection. At this time, all of the pump wear components were replaced even though they were not fully worn out. Based on this, it was determined that the parts wear life well exceeded 40 weeks compared to the 7-9 weeks for the prior pump in this service. The XHD lasted more than four times longer than the competitor's pump it replaced!

Goulds XHD Value Delivered

The XHD performance exceeded expectations and delivered real savings for the lowest cost of ownership.

Manufacture	Goulds	Brand X
Model / Size	125 XHD	8x6-18
Wear Parts	Metal	Rubber
Wear Life	35 weeks	9 weeks
Change-outs / Year	1.5	5.75
Annual Cost (Ratio)	1.00	2.00

The 125 XHD annual parts repair cost was half that of the existing rubber-lined pump. With labor and production downtime factored in, the total cost of ownership for the Goulds 125 XHD is less than one third the cost of the competitor's pump.

Goulds Pumps support and flexibility made it easy

This mine has a large number of ITT-Goulds Pumps on process applications. They have also used a few of the Model SRL rubber-lined pumps from the Goulds Pumps slurry product line on various services. These pumps have performed reliably with long parts wear-life.

The Goulds 125 XHD pump on mill discharge duty. The competitor's 8x6-18 pump can be seen in the background.

The local Goulds Pumps distributor in Durango, Bombas Suministros del Norte, stocks the repair parts and pumps locally to support the SRL pumps at this mine. As a result, the mine did not have to stock many parts. For this trial 125 XHD pump, the distributor stocked a spare pump and replacement parts to support the customer.

The customer was pleased with the total cost of ownership for the 125 XHD pump based on long wear life, minimal maintenance required and parts support from the local distributor.

This is a good example of identifying a problem application, selecting the right Goulds pump and wear material for the service, and following through during the trial with distributor support and participation.