



Pall Corporation

HYDRAULIC & LUBRICATION

Application Bulletin

MINING



Application

Maintenance expenditure on mining hydraulic shovels over their entire life cycle can be many times their initial purchase price. Pump failures, oil changes and unscheduled downtime are key contributors to these costs. Such costs are often referred to as Total Cost of Ownership (TCO) or Equipment Life Cycle Costs. Mine sites continually scrutinize such costs and implement new strategies and technologies to ensure each asset contributes to the lower cost per ton.

Problem

A large North American Gold mine was experiencing regular and high cost hydraulic pump failures on several of its large hydraulic shovels. These failures were found to be caused by excessively high oil contamination levels (ISO Code 22/20/17). These failures contributed to increased maintenance costs, and reduced equipment availability.

Solution

Each shovel's hydraulic system incorporates 7 large hydraulic intank return line filters. It was calculated that the full 2,200 Gallon hydraulic oil volume would be turned over every 1-6 minutes depending on operation. Pall Corporation designed a new filter element, part number F1390119 which replaced the cellulose based OEM filter.

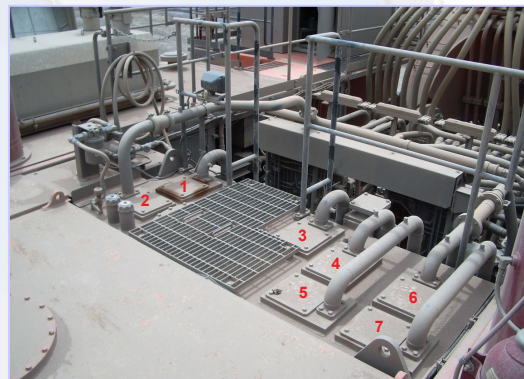
Results

- Oil cleanliness levels improved from ISO Code 22/20/17 to ISO Code 15/13/08 as reported by an on-line cleanliness monitor and verified by external laboratory analysis.
- Oil life extension from 500 hours to in excess of 1000 hours with a cost avoidance of \$2,640 every 500 hours for every machine on site.
- Decreased downtime, PM labor
- Increased pump life

Shovel Hydraulic Systems



Mining Hydraulic Shovel



Hydraulic Tank showing numbered filter locations



Pall F1390119 Filter Element

Contact us at www.pall.com/mining