



**CLEAN OIL**  
**BRIGHT IDEAS**

# Hydraulic Oil Mine Drilling Machine

## CJC™ Application Study

Application Study  
written by:

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### CUSTOMER

Compañía Minera Disputada - "El Soldado",  
Chile.

Contact Person: Augusto Morales,  
Superintendent, Maintenance, Mining Area.

### THE SYSTEM

A Drilltech drilling machine for the copper production site with a hydraulic system of 900 litres ISO VG 46 oil.

### THE PROBLEM

The cleanliness level of the hydraulic system in the drilling machine was 2½ times above the recommended level for economical and reliable operation. The contamination also had a destructive effect on the additives and entailed a great number of problems as brittleness of ball bearings, increased fatigue wear, corrosion due to sulphuric acid and hydrogen sulphide, decrease of viscosity and increase of the TAN value. All the above lead to increased wear and reduced life-time on both system components and oil.

### THE SOLUTION

A CJC™ Fine Filter HDU 27/27 PH was installed off-line on the system tank. The Fine Filter is equipped with a CJC™ Filter Insert B 27/27, 3 micron abs. with a dirt holding cap. of 4 litres.

### THE RESULT

Before installation of the filter the number of particles > 2 micron measured in 100 ml of oil was as high as 201,000 and the water level 209 ppm. After 15 days of continuous operation of the CJC™ Fine Filter the particle amount had decreased to 41,000 particles per 100 ml of oil corresponding to ISO class 16/15/10 and 118 ppm of water. The oil is today cleaner than new oil supplied by oil companies and recommended cleanliness classes for the hydraulic systems.



### THE RESULT

	03.02.01	06.02.01	23.02.01
Particles > 2µm	201,000	125,000	41,000
Particles > 5µm	49,500	49,000	21,000
Particles > 15µm	35,000	2,000	1,000
ISO Code	18/16/12	17/16/11	16/15/10
Water content, ppm	209	135	118

