



**CLEAN OIL**  
BRIGHT IDEAS

# Turbine Oil Hydro Power, Oil Storage Tank

## CJC™ Application Study

Application Study  
written by:

Justin Stover  
C.C.JENSEN INC.  
USA

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### CUSTOMER

The second largest hydro power plant in the United States.

### THE SYSTEM

Clean Oil Tank. Oil from Governor Oil Systems is periodically emptied into the tank where it is rapidly cleaned.

**Oil Type:** MOBIL DTE 799 (ISO VG 68)  
**Oil Volume:** 10,000 gallons (approx. 37,854 L)

### THE PROBLEM

Switching to a Group II base stock oil led to varnish precipitation in the turbine oil. This resulted in costly downtime and governor system failures.

The ISO Code was as high as 22/19/14. It was decided to purchase a high volume filter system to clean oil in the tank. The systems intended use was to remove particles, varnish, and other contaminants.

### THE SOLUTION

A CJC™ Fine Filter HDU 8 x 27/108 KF-EPTY using CJC™ Filter Inserts BLA 27/27 was selected for its high volume capability, fine filtration rating of 3-micron absolute, and the ability to remove varnish by adsorption. The filter system was also the lowest cost system proposed from several vendors.

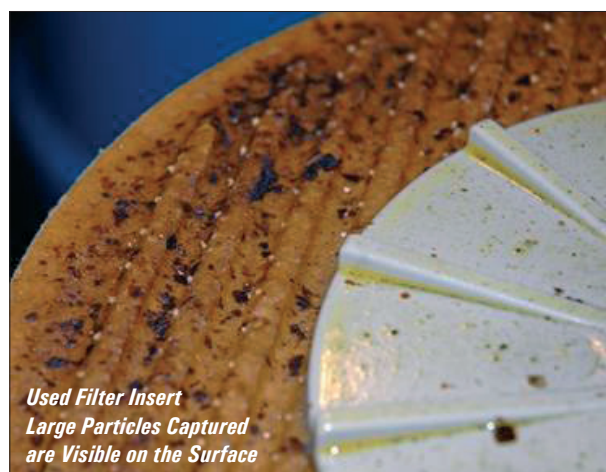
The system features two pumps for a combined flow rate of 70 gpm (approx. 265 L/min). A variable frequency drive allows for lower flow during periods where a high volume is not needed or when low oil temperatures result in high viscosity.

### THE RESULT

The contamination level was reduced to ISO 13/10/6 at the conclusion of the test. This translates into a **total particle reduction of over 80%**. No significant levels of varnish have been detected in the oil.



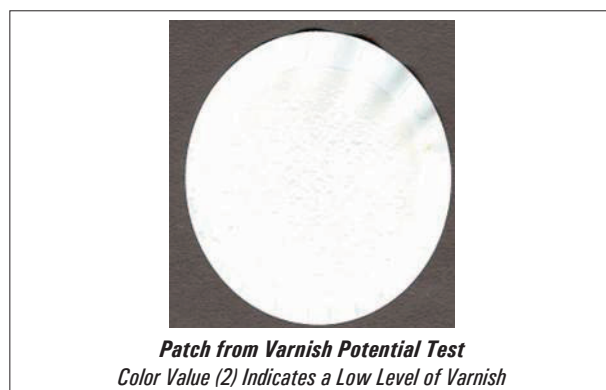
*High Volume Turbine Oil Filter System  
CJC™ Fine Filter HDU 8 x 27/108 KF-EPTY*



*Used Filter Insert  
Large Particles Captured  
are Visible on the Surface*

### OIL SAMPLES

TEST SAMPLE	BEFORE	AFTER
ISO Code	22/19/14	13/10/6
Varnish Potential Color Value	-	2



*Patch from Varnish Potential Test  
Color Value (2) Indicates a Low Level of Varnish*