

Camberwell Coal - Hitachi 3600 Excavator

Recently, this Hunter Valley coal company set out to improve the quality of the hydraulic oil being used in this machine. The aim was to reduce the particle count in its 4,500 litre (1,000 US Gal) hydraulic tank to 18/15 or better. At the time the hydraulic oil had been in use for 200 hours.



Filter Technology Australia custom built a filtration unit comprising 16 FMO4s with a 40 litre/min (11 US Gal/min) pump. The system was connected for 28 hours over the weekend and, as with all kidney loop systems, the unit needed to turn over the equivalent of 7-8 times the capacity of the tank to obtain one filtration pass. In 28 hours the unit turned over 67,200 litres (almost 20,000 US Gal) of oil or the equivalent of 2 full passes.

Results below, using the old standard ISO 4406 measuring particles above 5um and 15um, show a reduction of particulate contamination from 25/22 to 16/13 (or a 99.8% reduction).



Site Camberwell Coal
 Unit ID/Name Unit 203 / Excavator
 Manufacture/Model Hitachi / 3600
 Origin Hydraulic Tank
 Fuel/Oil Type Rando 46

Diagnosis:

Sample 39326 is sample taken before FTA filters fitted.
 Sample 39327 is sample taken after FTA filters fitted.
 Sample 39328 is sample taken after 28 hours on FTA fitted filters .

Sample Number	39328	39327	39326
Date	26/01/2003	25/01/2003	24/01/2003
Total Hours/Km			
Hours/Km on Oil	228	201	200
Oil Changed	NO	NO	NO
Oil Added			
ISO4406	16/13	18/15	>25/22
Gravi-Metric			
>2 micron	1621	5901	
>5 micron	599	2182	>320,000
>15 micron	64	233	>40,000
Cleanliness	Moderate	Elevated	Very High