

**Caterpillar 793 Haul Truck Final Drives : Leightons - Queensland**

**Leighton's Moura**

Leighton's have purchased a FM 504 and a FM 1040 T filter buggies to maintain the contamination within their Finaldrives and Hydraulic systems on the CAT 793 haul truck fleet.

Additionally they are fitting the Terex diggers with FTA filtration systems on Hydraulics, PTO, Swing Boxes and Engine Oils.

The FM 504 report on Hydraulics' below indicates the oil ISO has improved from 19/15 to 14/11 a 96% reduction in contaminates.



**Finaldrive Oil**

Filter Technology - Leightons Moura  
FTA / LEIGHTONS  
793-2 CAT 793-C  
Hydraulic Oil  
ISO 68



	18-Aug-05	19-Aug-05	20-Aug-06	
250,481	250,482	260,483		
0hrs	0hrs	0hrs		
No	No	No		
lead	ppm	ppm	ppm	
iron	1	1	1	
aluminium	6	6	4	
copper	1	1	1	
chromium	6	3	6	
tin	0	0	0	
nickel	0	0	0	
silver	2	2	3	
titanium	0	0	0	
Contaminants	ppm	ppm	ppm	
silicon	23	23	27	
sodium	2	2	1	
vanadium	0	0	0	
Oil Additives	ppm	ppm	ppm	
magnesium	159	43	182	
zinc	1439	1435	1347	
molybdenum	0.1	0	0	
calcium	3452	2836	2211	
phosphorous	1247	1211	1216	
boron	6	2	7	
barium	1	0	1	
Physical Tests	TBN	TAN		
fuel dilution %	0.00	0.00	0.00	
water %	0	0	0	
viscosity index	< 0.1	< 0.1	< 0.1	
visc @ 100oC - Cat	104	0	103	
visc @ 40oC - Cat	8.01	-	8.36	
FTIR Analysis	88	83	82	
soot - abs	0	0	0	
glycol%	0	0	0	
water ppm	0	0	0	
oxidation - abs	0	0	0	
nitration - abs	0	0	0	
sulphation - abs	0	0	0	
Particle Analysis	particle count in 1ml ISO-4406 6um \ 14um	23380	5080	832
PQ90 Fe - mg \ ltr	19/15	17/13	14/11	
	4	1	0	



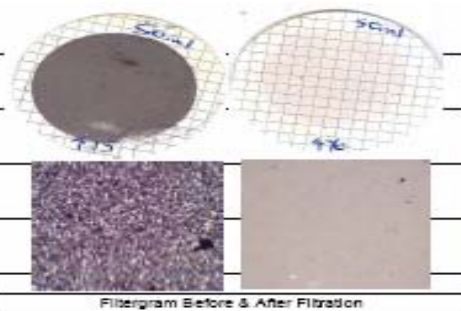
Filter Technology - Leightons Moura  
FTA / LEIGHTONS  
793-1 CAT 793-C  
Final Drive oil  
CALTEX TORQUE FLUID 454

18-Aug-05	19-Aug-05
260,474	250,477
0hrs	0hrs
No	No
ppm	ppm
1	1
35	14
0	0
5	4
1	0
0	0
0	0
0	0
0	0
ppm	ppm
5	5
6	4
0	0
ppm	ppm
3	4
25	25
0	0
269	216
274	261
66	60
5	3
0	0
0.00	0.00
0	0
< 0.1	< 0.1
95	97
23.60	24.20
314	318
0	0
0	0
0	0
0	0
0	0
0	0
58451	12520
22/17	17/15
90	10

Finaldrive oil life is at 6,000 hours and still reporting O.K, they are trying to achieve 10,000 hour drains. The report to the left is of the finaldrive oil returning to the 793 after filtering, the ISO particle count has been reduced from 22/17 to 17/15 a 78% reduction, Iron has been reduced from 35 ppm to 14 ppm a 60% improvement.

The filter patches below tell the real story of what contaminates are being removed from the finaldrive oil.

Leighton's are now looking at the results gained here to implement to other sites in Queensland.



Filtergram Before & After Filtration