



CONSTRUCTION EQUIPMENT

VOLVO L350 I 138 - DIESEL ENGINE



Sample No: VCP117501
Oil Type: SAE 15W40
Job No:



SAMPLE INFORMATION

Sample Number	VCP117501	VCP120664	VCP111041	VCP107960
Sample Date	30 May 2012	09 Oct 2011	02 Nov 2010	30 Aug 2010
Machine Hours	4310	3795	2589	1806
Oil Hours	0	0	500	0
Oil Changed	Changed	N/A	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

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 56195 PONTIAC TRAIL
 NEW HUDSON, MI
 US 48165
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OIL CONDITION

Visc @ 100°C	cSt	12.59	12.97	14.56	14.07
Oxidation (PA)	%	24	52	52	48



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.3	1.3	1.1	1.1
Nitration (PA)	%	33	75	67	58
Sulfation (PA)	%	30	58	58	53
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	5	4	3	5
Sodium	ppm	4	2	4	4
Potassium	ppm	0	<1	<1	0

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	60	53	66	47
Copper	ppm	4	4	5	13
Lead	ppm	4	5	4	1
Tin	ppm	0	2	3	0
Aluminum	ppm	1	2	1	1
Chromium	ppm	2	2	2	1
Molybdenum	ppm	58	49	5	23
Nickel	ppm	2	2	4	4
Titanium	ppm	<1	0	0	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	1	1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1408	1236	1701	1538
Magnesium	ppm	1042	773	822	559
Zinc	ppm	1381	1140	1222	1059
Phosphorus	ppm	1213	994	1023	924
Barium	ppm	0	0	0	0
Boron	ppm	6	6	5	4

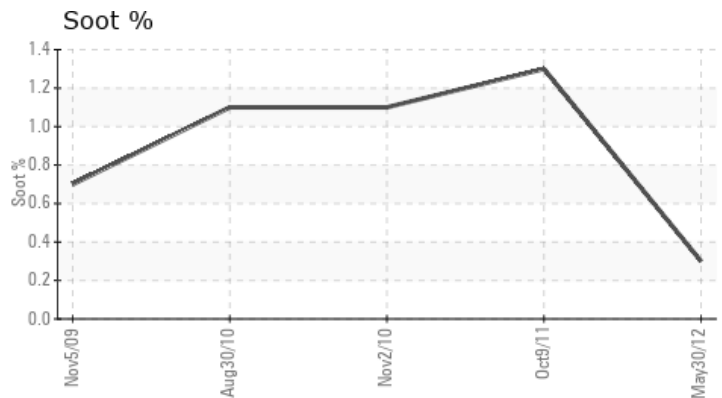
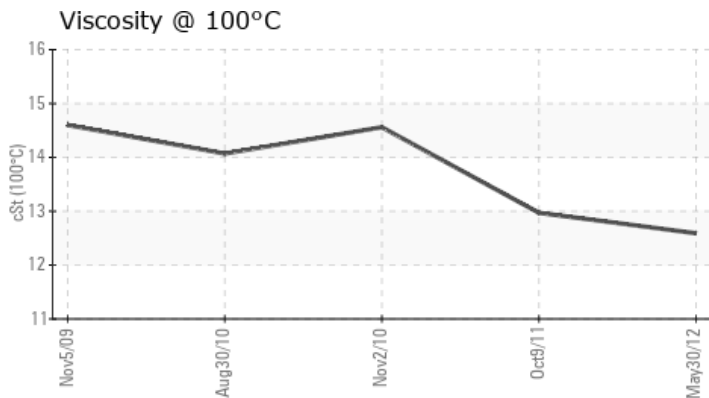
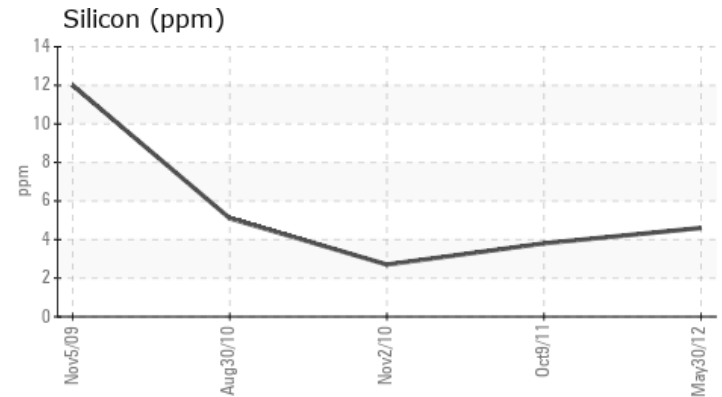
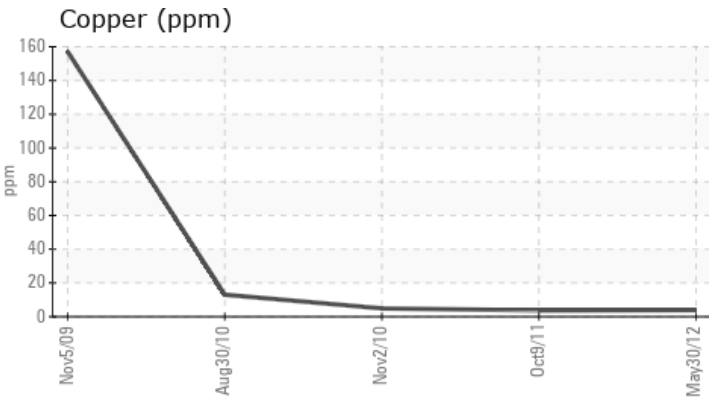
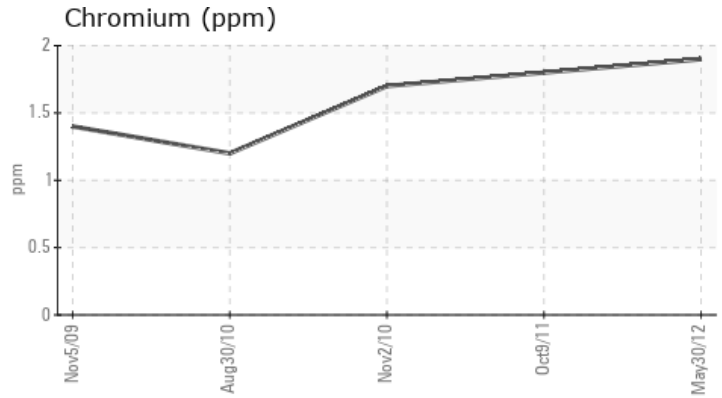
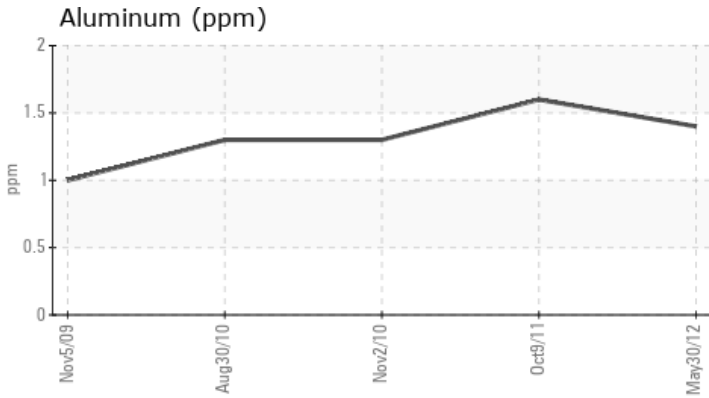
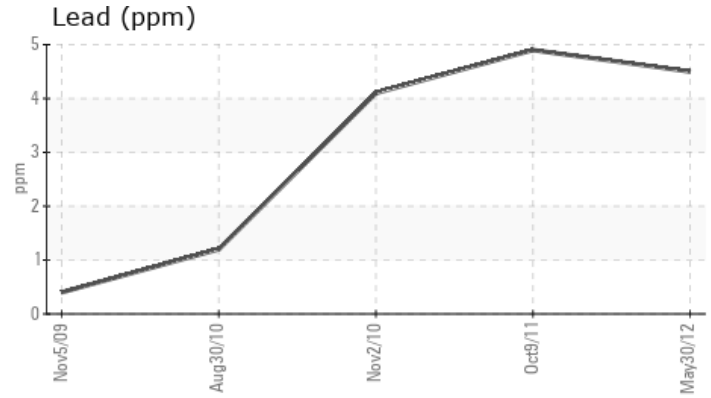
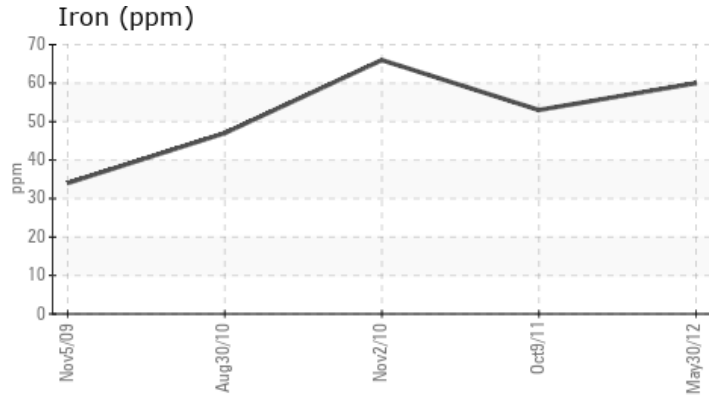
Depot: VOLVO2990
Unique No: 5936535
Signed: Elizabeth Valachovic
Report Date: 08 Jun 2012



CONSTRUCTION EQUIPMENT



GRAPHS





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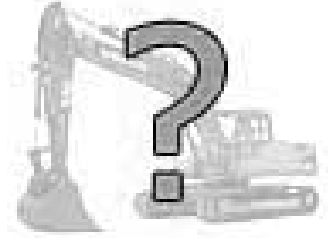
VOLVO L350 I 138 - HYDRAULIC SYSTEM



Sample No: VCP111355

Oil Type: ISO 46

Job No:



SAMPLE INFORMATION

Sample Number	VCP111355	---	---	---
Sample Date	02 Nov 2010	---	---	---
Machine Hours	2589	---	---	---
Oil Hours	2589	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	ABNORMAL	---	---	---

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OIL CONDITION

Visc @ 40°C	cSt	█ 43.53	---	---	---
Acid Number (AN)	mg KOH/g	█ 0.407	---	---	---



CONTAMINATION

Water	%	NEG	---	---	---
Particles >4µm		█ 2051	---	---	---
Particles >6µm		█ 1117	---	---	---
Particles >14µm		▲ 190	---	---	---
ISO 4406:1999 (c)		18/17/15	---	---	---
Silicon	ppm	█ 4	---	---	---
Sodium	ppm	█ <1	---	---	---
Potassium	ppm	█ 1	---	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The condition of oil is suitable for further service.



WEAR METALS

Iron	ppm	█ 6	---	---	---
Copper	ppm	█ 4	---	---	---
Lead	ppm	█ <1	---	---	---
Tin	ppm	█ 0	---	---	---
Aluminum	ppm	█ 1	---	---	---
Chromium	ppm	█ <1	---	---	---
Molybdenum	ppm	0	---	---	---
Nickel	ppm	█ <1	---	---	---
Titanium	ppm	0	---	---	---
Silver	ppm	0	---	---	---
Manganese	ppm	0	---	---	---
Vanadium	ppm	0	---	---	---



ADDITIVES

Calcium	ppm	183	---	---	---
Magnesium	ppm	2	---	---	---
Zinc	ppm	438	---	---	---
Phosphorus	ppm	352	---	---	---
Barium	ppm	0	---	---	---
Boron	ppm	3	---	---	---

Depot: VOLVO2990
Unique No: 5380820
Signed: Jonathan Hester
Report Date: 08 Nov 2010

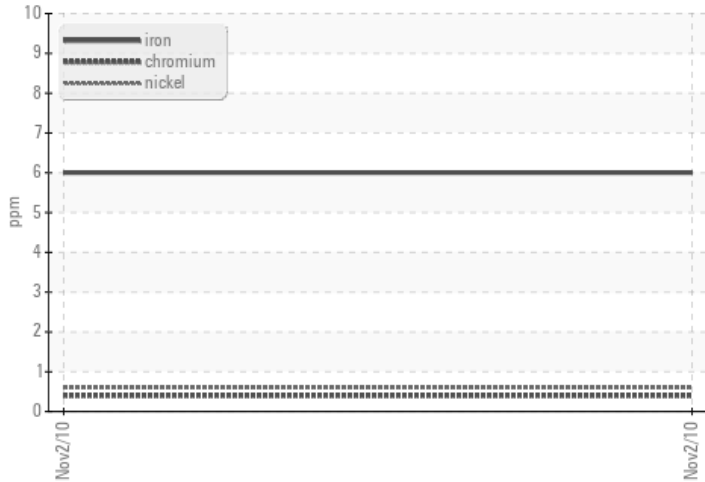


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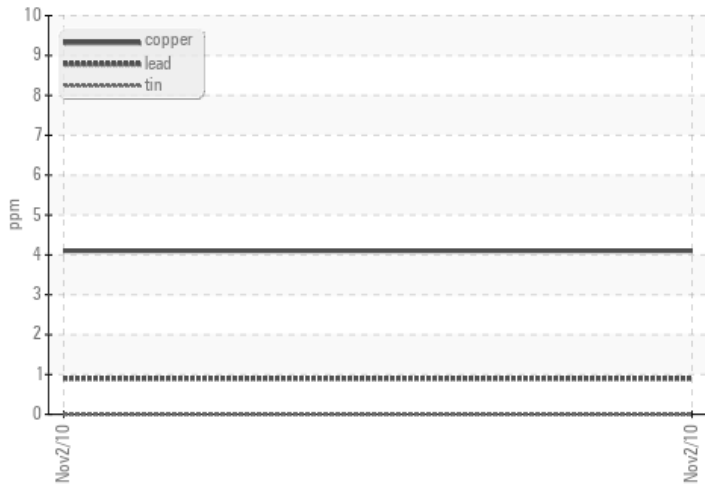


GRAPHS

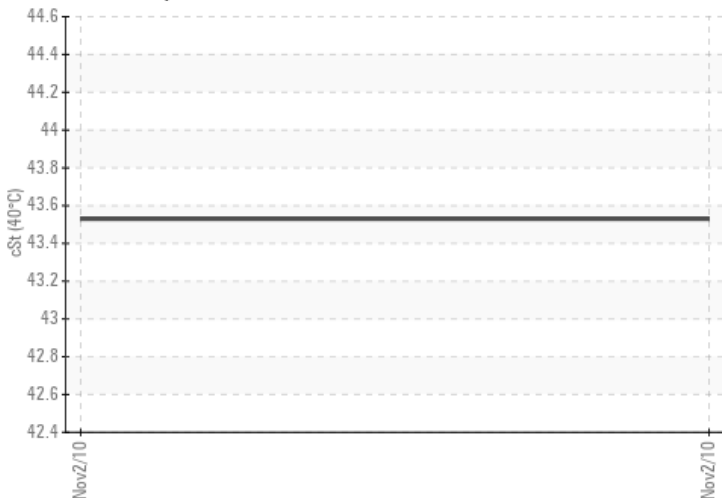
Ferrous Alloys



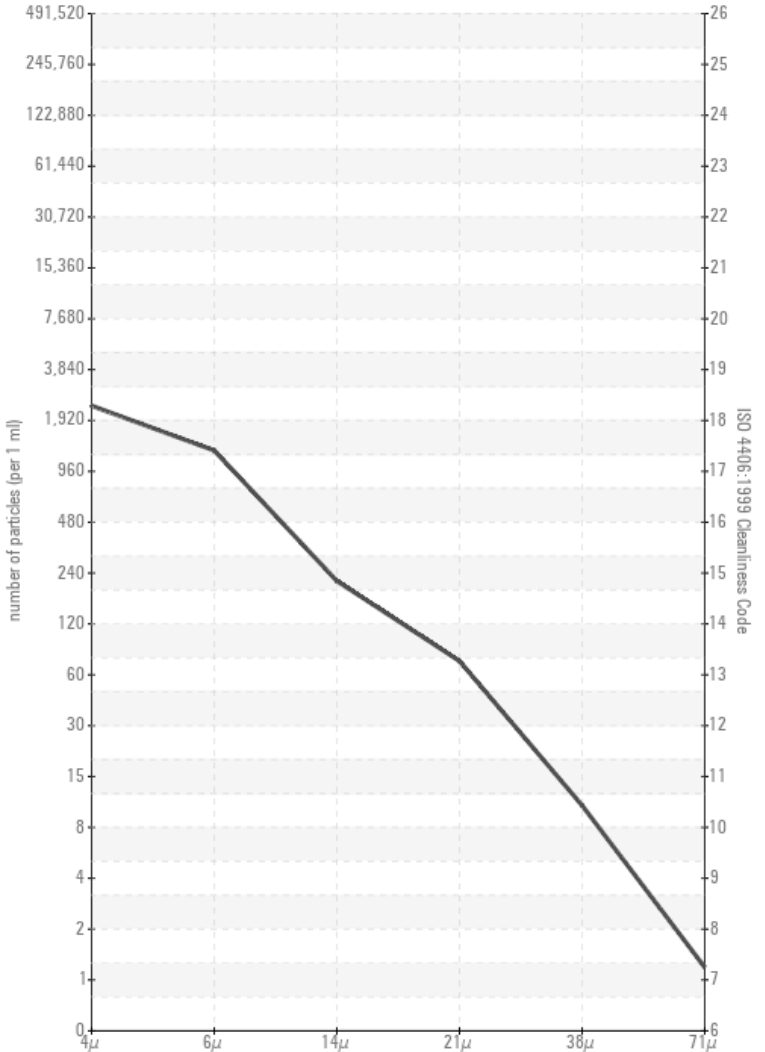
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number

