

Oil Analysis Report from the Oil Lab

expert independent oil analysis



Sample No. P065614-001	Report Date 23/11/2006	Unit ID	Volvo Penta
Customer Mr. M. Boulton		Description	Stb'd engine
Blue Star Surveys		Make	Volvo
Fifty Fifty		Model	TAMD 70B
Viking Marina			
Albert St.		Oil in Use	Not specified
Goole			
DN14 5SY			

IMMEDIATE ACTION**IMMEDIATE ACTION****IMMEDIATE ACTION**

SYMPTOMS: Note levels of: Silicon, Aluminium and oil viscosity.

DIAGNOSIS: Evidence of dirt ingress. Indication of some component wear, probably piston.
Possible fuel dilution of oil.

ACTION: Change oil. Check air intake system (filter/trunking) for leaks and rectify.
Check fuel pipes and injectors for possible leaks into lube oil system.

Date Sampled	19/11/2006
Date Received	21/11/2006
Date Tested	23/11/2006
Unit Life	
Oil Life (hrs)	12

STATUS CRITICAL

PHYSICAL PROPERTIES

Viscosity @ 40°C	cSt	84.8 * (typical 15w/40 is 100 cSt @40°C)
Water Content	%wt	0.0
Total Insoluble Matter	%wt	0.6

SPECTROCHEMICAL ANALYSIS

Iron	ppm	75
Chromium	ppm	11
Aluminium	ppm	59 *
Molybdenum	ppm	1
Copper	ppm	13
Lead	ppm	14
Tin	ppm	1
Nickel	ppm	1
Silicon	ppm	31 *
Sodium	ppm	5
Boron	ppm	166
Vanadium	ppm	0
Calcium	ppm	3112
Phosphorus	ppm	1070
Zinc	ppm	1203
Magnesium	ppm	459
Barium	ppm	0

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Sample No. P065614-002	Report Date 23/11/2006	Unit ID	Volvo Penta
Customer Mr. M. Boulton		Description	Port engine
Blue Star Surveys		Make	Volvo
Fifty Fifty		Model	TAMD 70B
Viking Marina			
Albert St.		Oil in Use	Not specified
Goole			
DN14 5SY			

EARLY WARNING***EARLY WARNING*****EARLY WARNING**

SYMPTOMS: Note levels of: Silicon and oil viscosity.

DIAGNOSIS: Evidence of dirt ingress.

Possible fuel dilution of oil.

ACTION: Change oil. Check air intake system (filter/trunking) for leaks and rectify.

Check fuel pipes and injectors for possible leaks into lube oil system.

Date Sampled	19/11/2006
Date Received	21/11/2006
Date Tested	23/11/2006
Unit Life	
Oil Life (hrs)	12

STATUS CAUTION

PHYSICAL PROPERTIES

Viscosity @ 40°C	cSt	75.3 * (typical 15w/40 is 100 cSt @40°C)
Water Content	%wt	0.0
Total Insoluble Matter	%wt	0.6

SPECTROCHEMICAL ANALYSIS

Iron	ppm	76
Chromium	ppm	9
Aluminium	ppm	8
Molybdenum	ppm	1
Copper	ppm	13
Lead	ppm	10
Tin	ppm	2
Nickel	ppm	0
Silicon	ppm	34 *
Sodium	ppm	7
Boron	ppm	155
Vanadium	ppm	0
Calcium	ppm	2863
Phosphorus	ppm	1041
Zinc	ppm	1165
Magnesium	ppm	498
Barium	ppm	0

OUR GUIDE TO YOUR OIL SAMPLE REPORT

Thank you for using our service. We are confident that you will find the attached report of interest. By analysing oil on a regular basis you can achieve a long trouble free life from your vehicle/ machine, and optimum life from your oil.

For your guidance we give below an explanation of the spectrochemical details that are shown on our reports. (ppm = parts per million)

Total Insoluble Matter) Principally carbon generated by combustion 2.5% max.

Iron Generally results from ring, bore, cam, tappet or crankshaft wear. If the concentration quickly reaches 50 ppm inspect to determine the cause.

Permissible maximum is about 100 ppm.

Chromium Usually from piston rings or plated bores, 30 ppm is the normal working maximum.

Aluminium Caused by piston or bearing wear, we would warn you at a level of 20 ppm or above.

Copper Originates from copper/lead bearings or syncromeshes in gearboxes, we don't like to see above 50 ppm .

Lead Usually derived from lead/tin bearings (white metal) or copper/lead main and big end bearings. Is also used as an octane boosting additive in petrol. If the lead originates from bearing wear, then over 50 ppm indicates a problem. Petrol engines running on leaded fuel can show levels of several thousand ppm.

Tin From lead/tin or aluminium/tin bearings . Levels over 25 ppm need investigation.

Nickel Used as an alloy in steel components and will rise as a function of iron wear.

Silicon Normally derived from sand/clay ie. dust. Over 20 ppm indicates need for attention to air intake filter/ trunking or excessive wear will result.

Sodium Indicates water ingress most commonly due to coolant leaking in to oil. Usually caused by faulty head gasket, liner seals or perforated liner. We would expect to see levels of 100 ppm and above if there is a problem

Boron Used either as an additive in antifreeze or as an extreme pressure additive in some oil blends. Levels over 50 ppm if they come from antifreeze indicate a problem.

Vanadium Contained in surface coatings, turbine impeller blades, valves. Also a trace element derived from base oil or fuel - not of concern in normal applications.

CALCIUM, PHOSPHORUS, ZINC, MAGNESIUM AND BARIUM are all additives used by oil companies in the manufacture of their lubricants.

Oil Analysis is such a useful maintenance tool for everyone, whether in industry or at home. Our aim is to make it affordable, accessible and easy to understand. We hope that we have achieved our objective and that we can continue to be of service to you.

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Our conditions of trading are available on request