

OIL ANALYSIS REPORT



VOLVO PENTA 1013942102 - STARBOARD DIESEL ENGINE

Sample No: VPA051816

Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA051816	VPA051775	VPA048140	VPA034056
Sample Date	01 Mar 2024	29 Aug 2023	28 Jun 2023	08 Mar 2023
Machine Hours	0	4811	4361	3812
Oil Hours	1011	980	520	873
Oil Changed	Changed	Changed	Not Changd	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	ATTENTION

NEWT MARINE

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OIL CONDITION

Visc @ 100°C	cSt	▲ 11.7	■ 12.6	■ 12.6	● 12.4
Base Number (BN)	mg KOH/g	■ 7.8	■ 8.5	■ 9.1	■ 9.3
Oxidation (PA)	%	55	62	63	61

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	■ 0.5	■ 0.7	■ 0.3	■ 0.5
Nitration (PA)	%	57	69	54	63
Sulfation (PA)	%	53	59	57	58
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	▲ 4.4	<1.0	<1.0	▲ 3.8
Silicon	ppm	■ 3	■ 4	■ 4	■ 5
Sodium	ppm	■ 3	■ 4	■ 0	■ 2
Potassium	ppm	■ 1	■ <1	■ 1	■ <1

WEAR METALS

Iron	ppm	■ <1	■ 9	■ 5	■ 10
Copper	ppm	■ <1	■ 1	■ <1	■ <1
Lead	ppm	■ 1	■ <1	■ <1	■ <1
Tin	ppm	■ 0	■ <1	■ <1	■ <1
Aluminum	ppm	■ <1	■ 0	■ 2	■ 1
Chromium	ppm	■ <1	■ <1	■ 0	■ <1
Molybdenum	ppm	■ 60	■ 61	■ 68	■ 59
Nickel	ppm	■ 0	■ 0	■ 0	■ 0
Titanium	ppm	■ 0	■ 0	■ 0	■ <1
Silver	ppm	■ 0	■ 0	■ 0	■ 0
Manganese	ppm	■ <1	■ <1	■ <1	■ 1
Vanadium	ppm	<1	<1	0	<1

ADDITIVES

Calcium	ppm	■ 1133	■ 1082	■ 1145	■ 1092
Magnesium	ppm	1059	■ 993	1015	■ 951
Zinc	ppm	■ 1364	■ 1266	■ 1351	■ 1285
Phosphorus	ppm	■ 1075	■ 989	■ 1146	■ 966
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 0	■ 1	■ <1	■ 2

Diagnosis

We advise that you check the fuel injection system. 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 moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Depot: VP99298099
Unique No: 10915906
Signed: Jonathan Hester
Report Date: 12 Mar 2024

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VOLVO PENTA

GRAPHS

