

OIL ANALYSIS REPORT

VOLVO PENTA

SCARLETE RINER ROSCOE VOLVO PENTA 1013935841 - STARBOARD DIESEL ENGINE

Sample No: VPA051771
Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA051771	VPA034042	VPA038816	---
Sample Date	19 Jul 2023	22 Feb 2023	05 Aug 2022	---
Machine Hours	1619	1019	618	---
Oil Hours	589	1019	618	---
Oil Changed	Not Changd	Changed	Not Changd	---
Sample Status	ATTENTION	ATTENTION	ATTENTION	---

NEWT MARINE

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OIL CONDITION

Visc @ 100°C	cSt	▲ 11.9	▲ 11.3	▲ 11.78	---
Base Number (BN)	mg KOH/g	■ 8.8	■ 8.3	■ 9.6	---
Oxidation (PA)	%	■ 63	■ 91	■ 96	---

CONTAMINATION

Soot %	%	■ 0.1	■ 0.2	■ 0.2	---
Nitration (PA)	%	■ 58	■ 75	■ 74	---
Sulfation (PA)	%	■ 55	■ 65	■ 69	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	▲ 2.9	---
Silicon	ppm	■ 5	■ 24	■ 25	---
Sodium	ppm	■ 1	■ 0	■ 4	---
Potassium	ppm	■ 4	■ 35	■ 35	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

WEAR METALS

Iron	ppm	■ 6	■ 18	■ 15	---
Copper	ppm	■ 12	▲ 107	■ 6	---
Lead	ppm	■ <1	■ 2	■ 2	---
Tin	ppm	■ <1	■ 2	■ 3	---
Aluminum	ppm	■ 2	■ 14	■ 13	---
Chromium	ppm	■ 0	■ <1	■ <1	---
Molybdenum	ppm	■ 58	■ 42	■ 38	---
Nickel	ppm	■ 0	■ 0	■ <1	---
Titanium	ppm	■ <1	■ <1	■ <1	---
Silver	ppm	■ 0	■ 0	■ 0	---
Manganese	ppm	■ <1	■ 2	■ 2	---
Vanadium	ppm	<1	0	<1	---

ADDITIVES

Calcium	ppm	■ 1148	■ 1557	■ 1532	---
Magnesium	ppm	■ 1016	■ 525	464	---
Zinc	ppm	■ 1320	■ 1075	■ 1009	---
Phosphorus	ppm	■ 1013	■ 882	■ 799	---
Barium	ppm	■ 0	■ 0	■ <1	---
Boron	ppm	■ 0	■ 30	■ 47	---

Depot: VP99298099
Unique No: 10593021
Signed: Don Baldrige
Report Date: 11 Aug 2023

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GRAPHS

