

OIL ANALYSIS REPORT

VOLVO PENTA

STEVEN HAFENER 7716397 VOLVO PENTA A1074907 - STARBOARD DIESEL ENGINE

Sample No: VPA041621

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

SAMPLE INFORMATION

Sample Number	VPA041621	VPA044700	VPA037824	---
Sample Date	12 Oct 2023	22 Sep 2022	30 Jul 2021	---
Machine Hours	308	237	107	---
Oil Hours	0	130	107	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

Pacific Power Group - VP981534

7215 S 228th St

Kent, WA

US 98032

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F:

OIL CONDITION

Visc @ 100°C	cSt	█ 13.3	█ 13.1	█ 13.0	---
Base Number (BN)	mg KOH/g	█ 10.1	█ 11.0	---	---
Oxidation (PA)	%	57	65	39	---

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

CONTAMINATION

Soot %	%	█ 0.1	█ 0.3	█ 0.2	---
Nitration (PA)	%	47	63	43	---
Sulfation (PA)	%	52	58	40	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	█ 6	█ 11	█ 28	---
Sodium	ppm	█ 1	█ 2	█ 4	---
Potassium	ppm	█ 2	█ 0	█ 6	---

WEAR METALS

Iron	ppm	█ 22	█ 33	█ 88	---
Copper	ppm	█ 3	█ 9	█ 16	---
Lead	ppm	█ 2	█ 3	█ 12	---
Tin	ppm	█ <1	█ 0	█ 0	---
Aluminum	ppm	█ 13	█ 21	█ 69	---
Chromium	ppm	█ 1	█ 2	█ 5	---
Molybdenum	ppm	█ 59	█ 58	█ 47	---
Nickel	ppm	█ 2	█ <1	█ 2	---
Titanium	ppm	█ 0	█ 0	█ <1	---
Silver	ppm	█ 0	█ 0	█ 0	---
Manganese	ppm	█ <1	█ <1	█ 2	---
Vanadium	ppm	0	0	0	---

ADDITIVES

Calcium	ppm	█ 1069	█ 1024	█ 1149	---
Magnesium	ppm	█ 1002	█ 942	█ 1066	---
Zinc	ppm	█ 1400	█ 1180	█ 1351	---
Phosphorus	ppm	█ 1136	█ 1046	█ 1308	---
Barium	ppm	█ 0	█ 0	█ 2	---
Boron	ppm	█ 2	█ 2	█ 8	---

Depot: VP99031103

Unique No: 10708790

Signed: Don Baldrige

Report Date: 25 Oct 2023

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GRAPHS

