

OIL ANALYSIS REPORT

**VOLVO
PENTA**

PEARSON BUD VOLVO PENTA 2204126077 - STARBOARD DIESEL ENGINE

Sample No: VPA044791

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA044791	VPA047907	VPA040393	VPA031700
Sample Date	31 Oct 2023	01 Nov 2022	01 Dec 2021	30 Oct 2020
Machine Hours	1882	1835	1740	1663
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

Point Judith Marina

360 Gooseberry Road

WAKEFIELD, RI

US 02879

Contact: MATT ST. ANGELO

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OIL CONDITION

Visc @ 100°C	cSt	13.8	13.1	13.5	14.1
Base Number (BN)	mg KOH/g	8.5	11.4	9.7	---
Oxidation (PA)	%	71	71	70	83

CONTAMINATION

Soot %	%	0.2	0.2	0.2	0.2
Nitration (PA)	%	63	68	64	71
Sulfation (PA)	%	57	58	57	63
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	9	9	6	3
Sodium	ppm	2	<1	1	5
Potassium	ppm	6	2	2	7

WEAR METALS

Iron	ppm	21	28	16	13
Copper	ppm	2	2	2	3
Lead	ppm	<1	<1	1	2
Tin	ppm	<1	1	2	1
Aluminum	ppm	▲ 20	6	<1	0
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	17	65	53	3
Nickel	ppm	2	0	<1	<1
Titanium	ppm	<1	0	0	0
Silver	ppm	0	0	<1	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	1782	1121	1330	2136
Magnesium	ppm	200	938	892	14
Zinc	ppm	1109	1270	1272	1106
Phosphorus	ppm	1020	1062	1124	965
Barium	ppm	5	0	0	0
Boron	ppm	144	6	28	193

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other 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.

Depot: VP153811

Unique No: 10728548

Signed: Sean Felton

Report Date: 08 Nov 2023

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GRAPHS

