

OIL ANALYSIS REPORT

VOLVO PENTA

MARK CROWE YANMAR 70246 - STARBOARD DIESEL ENGINE

Sample No: VPA044785

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA044785	VPA039891	VPA040207	VPA031699
Sample Date	29 Oct 2023	29 Oct 2022	24 Oct 2021	01 Nov 2020
Machine Hours	1355	1331	1304	1310
Oil Hours	24	28	33	50
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

Point Judith Marina

360 Gooseberry Road

WAKEFIELD, RI

US 02879

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OIL CONDITION

Visc @ 100°C	cSt	13.7	13.9	13.8	14.0
Base Number (BN)	mg KOH/g	8.5	10.2	---	---
Oxidation (PA)	%	67	76	72	74

CONTAMINATION

Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	49	57	53	54
Sulfation (PA)	%	56	62	59	61
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	2	2	2	2
Sodium	ppm	3	3	4	7
Potassium	ppm	4	4	7	7

WEAR METALS

Iron	ppm	4	7	10	15
Copper	ppm	2	1	1	<1
Lead	ppm	3	6	<1	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	1	2	2	0
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	2	7	2	2
Nickel	ppm	0	0	<1	<1
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	<1	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	<1	0	<1	0

ADDITIVES

Calcium	ppm	2238	2243	2346	2187
Magnesium	ppm	26	50	17	14
Zinc	ppm	1276	1157	1304	1121
Phosphorus	ppm	1015	1004	1048	1005
Barium	ppm	0	0	0	0
Boron	ppm	191	183	224	228

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 acceptable for the time in service.

Depot: VP153811

Unique No: 10727190

Signed: Don Baldrige

Report Date: 07 Nov 2023

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GRAPHS

