

OIL ANALYSIS REPORT



MIKE GORMAN VOLVO PENTA 7011435660 - PORT DIESEL ENGINE

Sample No: VPA055072
Oil Type: VOLVO PENTA SAE 15W40

SAMPLE INFORMATION

Sample Number	VPA055072	VPA031076	VPA026786	VPA020891
Sample Date	10 Aug 2023	08 Dec 2022	20 Oct 2020	18 Nov 2019
Machine Hours	0	932	544	411
Oil Hours	0	0	150	350
Oil Changed	N/A	N/A	Changed	Changed
Sample Status	ATTENTION	ATTENTION	ATTENTION	NORMAL

Outstanding Marine
 PO Box 274
 GALENA, MD
 US 21635
 Contact: Ronda Bolinger
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OIL CONDITION

Visc @ 100°C	cSt	▲ 12.3	▲ 12.2	▲ 11.7	10.4
Base Number (BN)	mg KOH/g	■ 9.4	■ 9.7	---	---
Oxidation (PA)	%	51	56	59	61

CONTAMINATION

Soot %	%	■ 0.1	■ 0.2	■ 0.3	■ 0.6
Nitration (PA)	%	40	50	58	68
Sulfation (PA)	%	49	53	57	57
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	▲ 3.8	<1.0
Silicon	ppm	■ 4	■ 4	■ <1	■ 22
Sodium	ppm	■ 1	■ <1	■ 2	■ 2
Potassium	ppm	■ 2	■ 0	■ 0	■ 1

Diagnosis

No corrective action is recommended at this time. 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	■ 5	■ 7	■ 12	■ 22
Copper	ppm	■ 16	■ 24	■ 50	■ 111
Lead	ppm	■ 1	■ <1	■ 1	■ 2
Tin	ppm	■ <1	■ <1	■ <1	■ <1
Aluminum	ppm	■ 2	■ <1	■ 0	■ 2
Chromium	ppm	■ 0	■ <1	■ <1	■ 1
Molybdenum	ppm	■ 59	■ 54	■ 56	■ 48
Nickel	ppm	■ <1	■ <1	■ 2	■ 4
Titanium	ppm	■ 0	■ 0	■ 0	■ 0
Silver	ppm	■ <1	■ 0	■ <1	■ <1
Manganese	ppm	■ <1	■ <1	■ <1	■ 2
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	■ 1047	■ 1066	■ 984	■ 1048
Magnesium	ppm	992	■ 852	■ 885	■ 742
Zinc	ppm	■ 1309	■ 1186	■ 1141	■ 1013
Phosphorus	ppm	■ 1084	■ 993	■ 1006	■ 906
Barium	ppm	■ 0	■ 0	■ <1	■ <1
Boron	ppm	■ 1	■ 6	■ 6	■ 3

Depot: VP153685
Unique No: 10601856
Signed: Don Baldrige
Report Date: 12 Aug 2023

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**VOLVO
PENTA**

GRAPHS

