

OIL ANALYSIS REPORT

**VOLVO
PENTA**

NADINE URCIUOLI STEPHEN BROWN VOLVO PENTA 4012191485 - GASOLINE ENGINE

Sample No: VPA051569

Oil Type: VOLVO

SAMPLE INFORMATION

Sample Number	VPA051569	VPA051897	---	---
Sample Date	25 Mar 2024	31 Jan 2024	---	---
Machine Hours	504	0	---	---
Oil Hours	504	504	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	MARGINAL	NORMAL	---	---

Helmuts Marine Service

619 Canal Street
SAN RAFAEL, CA
US 94901-3545
Contact: NADINE URCIUOLI
SERVICE@HELMUTSMARINE.COM

T: x:

F: x:

OIL CONDITION

Visc @ 100°C	cSt	▲ 17.43	■ 13.7	---	---
Base Number (BN)	mg KOH/g	■ 6.4	■ 5.2	---	---
Oxidation (PA)	%	11	10	---	---

CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	■ 0.1	■ 0.1	---	---
Nitration (PA)	%	8	8	---	---
Sulfation (PA)	%	12	11	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	■ 8	■ 7	---	---
Sodium	ppm	■ 13	■ 12	---	---
Potassium	ppm	■ 2	■ 2	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. 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 higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

WEAR METALS

Iron	ppm	■ 35	■ 29	---	---
Copper	ppm	■ 55	■ 44	---	---
Lead	ppm	■ <1	■ 3	---	---
Tin	ppm	■ <1	■ 1	---	---
Aluminum	ppm	■ 4	■ 3	---	---
Chromium	ppm	■ 2	■ 2	---	---
Molybdenum	ppm	41	35	---	---
Nickel	ppm	■ <1	■ <1	---	---
Titanium	ppm	<1	<1	---	---
Silver	ppm	■ 0	■ 0	---	---
Manganese	ppm	<1	<1	---	---
Vanadium	ppm	<1	<1	---	---

ADDITIVES

Calcium	ppm	1604	1578	---	---
Magnesium	ppm	36	31	---	---
Zinc	ppm	763	760	---	---
Phosphorus	ppm	590	601	---	---
Barium	ppm	0	0	---	---
Boron	ppm	0	0	---	---

Depot: VP152741

Unique No: 10963033

Signed: Jonathan Hester

Report Date: 10 Apr 2024

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GRAPHS

