

OIL ANALYSIS REPORT

VOLVO PENTA

NADINE URCIOLI RAJ SINGH VOLVO PENTA A1140493 - CENTER GASOLINE ENGINE

Sample No: VPA051681

Oil Type: VOLVO 10W40

SAMPLE INFORMATION

Sample Number	VPA051681	---	---	---
Sample Date	20 Feb 2024	---	---	---
Machine Hours	0	---	---	---
Oil Hours	0	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	ABNORMAL	---	---	---

Helmut's 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	▲ 12.3	---	---	---
Base Number (BN)	mg KOH/g	■ 6.5	---	---	---
Oxidation (PA)	%	14	---	---	---

CONTAMINATION

Water	%	NEG	---	---	---
Soot %	%	■ 0	---	---	---
Nitration (PA)	%	10	---	---	---
Sulfation (PA)	%	12	---	---	---
Glycol	%	NEG	---	---	---
Fuel	%	▲ 2.7	---	---	---
Silicon	ppm	▲ 73	---	---	---
Sodium	ppm	■ 8	---	---	---
Potassium	ppm	■ 9	---	---	---

WEAR METALS

Iron	ppm	■ 41	---	---	---
Copper	ppm	▲ 183	---	---	---
Lead	ppm	■ 1	---	---	---
Tin	ppm	■ 1	---	---	---
Aluminum	ppm	■ 7	---	---	---
Chromium	ppm	■ 4	---	---	---
Molybdenum	ppm	55	---	---	---
Nickel	ppm	■ 2	---	---	---
Titanium	ppm	<1	---	---	---
Silver	ppm	■ <1	---	---	---
Manganese	ppm	32	---	---	---
Vanadium	ppm	<1	---	---	---

ADDITIVES

Calcium	ppm	2907	---	---	---
Magnesium	ppm	35	---	---	---
Zinc	ppm	1126	---	---	---
Phosphorus	ppm	954	---	---	---
Barium	ppm	3	---	---	---
Boron	ppm	5	---	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Depot: VP152741

Unique No: 10900894

Signed: Jonathan Hester

Report Date: 04 Mar 2024

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GRAPHS

