

# OIL ANALYSIS REPORT

# VOLVO PENTA

## LICCLARDELLO DETROIT LICCLARDELLO (S/N N/A) - STARBOARD DIESEL ENGINE

Sample No: VPA036647

Oil Type: {unknown}

### SAMPLE INFORMATION

Sample Number	VPA036647	---	---	---
Sample Date	20 Feb 2024	---	---	---
Machine Hours	0	---	---	---
Oil Hours	0	---	---	---
Oil Changed	Not Changd	---	---	---
Sample Status	SEVERE	---	---	---

Richey Boat & Motor - 806884

13213 Us 19

HUDSON, FL

US 34667

Contact: Kyle Messier

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### OIL CONDITION

Visc @ 100°C	cSt	█ 12.5	---	---	---
Base Number (BN)	mg KOH/g	█ 7.6	---	---	---
Oxidation (PA)	%	88	---	---	---

### Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

### CONTAMINATION

Water	%	NEG	---	---	---
Soot %	%	█ 0.3	---	---	---
Nitration (PA)	%	73	---	---	---
Sulfation (PA)	%	52	---	---	---
Glycol	%	NEG	---	---	---
Fuel	%	<1.0	---	---	---
Silicon	ppm	▲ 35	---	---	---
Sodium	ppm	█ 12	---	---	---
Potassium	ppm	█ 11	---	---	---

### WEAR METALS

Iron	ppm	▲ 279	---	---	---
Copper	ppm	▲ 76	---	---	---
Lead	ppm	█ 2	---	---	---
Tin	ppm	▲ 91	---	---	---
Aluminum	ppm	● 11	---	---	---
Chromium	ppm	█ 4	---	---	---
Molybdenum	ppm	█ 71	---	---	---
Nickel	ppm	█ 1	---	---	---
Titanium	ppm	█ 1	---	---	---
Silver	ppm	█ 0	---	---	---
Manganese	ppm	3	---	---	---
Vanadium	ppm	<1	---	---	---

### ADDITIVES

Calcium	ppm	█ 1564	---	---	---
Magnesium	ppm	█ 1114	---	---	---
Zinc	ppm	█ 1348	---	---	---
Phosphorus	ppm	█ 1126	---	---	---
Barium	ppm	█ 0	---	---	---
Boron	ppm	█ 81	---	---	---

Depot: VP155349

Unique No: 10937600

Signed: Jonathan Hester

Report Date: 22 Mar 2024

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## GRAPHS

