

# OIL ANALYSIS REPORT



**DARELL KRASNOFF 503109 VR09 VOLVO PENTA 2006034699 - PORT DIESEL ENGINE**

**Sample No:** VPA052334  
**Oil Type:** VOLVO VDS-4.5 Premium Motor Oil 15W40

## SAMPLE INFORMATION

Sample Number	<b>VPA052334</b>	VPA060177	VPA038602	---
Sample Date	<b>08 Feb 2024</b>	26 Sep 2023	09 Mar 2022	---
Machine Hours	<b>611</b>	604	0	---
Oil Hours	<b>0</b>	604	0	---
Oil Changed	<b>Not Changd</b>	Not Changd	Not Changd	---
Sample Status	<b>NORMAL</b>	ATTENTION	ATTENTION	---

**Helmut's Marine Service**  
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 SAN RAFAEL, CA  
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 SERVICE@HELMUTSMARINE.COM  
 T: x:  
 F: x:

## OIL CONDITION

Visc @ 100°C	cSt	<b>13.4</b>	13.4	13.6	---
Base Number (BN)	mg KOH/g	<b>10.2</b>	9.6	11.1	---
Oxidation (PA)	%	<b>56</b>	57	65	---

## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	---
Soot %	%	<b>0.1</b>	0.1	0.1	---
Nitration (PA)	%	<b>46</b>	53	62	---
Sulfation (PA)	%	<b>51</b>	51	56	---
Glycol	%	<b>NEG</b>	NEG	0.0	---
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	---
Silicon	ppm	<b>5</b>	7	7	---
Sodium	ppm	<b>20</b>	35	101	---
Potassium	ppm	<b>2</b>	2	6	---

## Diagnosis

Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. 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 suitable for further service.

## WEAR METALS

Iron	ppm	<b>31</b>	109	121	---
Copper	ppm	<b>6</b>	11	5	---
Lead	ppm	<b>4</b>	10	3	---
Tin	ppm	<b>0</b>	1	<1	---
Aluminum	ppm	<b>25</b>	90	158	---
Chromium	ppm	<b>2</b>	7	6	---
Molybdenum	ppm	<b>56</b>	62	59	---
Nickel	ppm	<b>&lt;1</b>	2	1	---
Titanium	ppm	<b>&lt;1</b>	0	<1	---
Silver	ppm	<b>0</b>	0	0	---
Manganese	ppm	<b>0</b>	1	<1	---
Vanadium	ppm	<b>&lt;1</b>	<1	<1	---

## ADDITIVES

Calcium	ppm	<b>920</b>	1129	1083	---
Magnesium	ppm	<b>872</b>	1092	961	---
Zinc	ppm	<b>1135</b>	1520	1292	---
Phosphorus	ppm	<b>882</b>	1236	1069	---
Barium	ppm	<b>11</b>	0	0	---
Boron	ppm	<b>2</b>	<1	4	---

**Depot:** VP152741  
**Unique No:** 10882778  
**Signed:** Sean Felton  
**Report Date:** 16 Feb 2024

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## GRAPHS

