

# OIL ANALYSIS REPORT



## BRIAN CELLA 1610114 VOLVO PENTA A1089811 - STARBOARD DIESEL ENGINE

**Sample No:** VPA054096  
**Oil Type:** VOLVO PENTA SAE 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA054096</b>	VPA031074	VPA037826	VPA034572
Sample Date	<b>09 May 2024</b>	29 Aug 2022	07 Aug 2021	31 Aug 2020
Machine Hours	<b>340</b>	253	205	134
Oil Hours	<b>0</b>	0	71	134
Oil Changed	<b>N/A</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

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### OIL CONDITION

Visc @ 100°C	cSt	<b>13.2</b>	13.4	13.1	13.1
Base Number (BN)	mg KOH/g	<b>10.7</b>	11.2	---	---
Oxidation (PA)	%	<b>55</b>	58	58	49

### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.2</b>	0.3	0.3	0.3
Nitration (PA)	%	<b>43</b>	49	48	54
Sulfation (PA)	%	<b>51</b>	57	55	49
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>6</b>	6	7	20
Sodium	ppm	<b>4</b>	2	2	3
Potassium	ppm	<b>10</b>	1	<1	4

### WEAR METALS

Iron	ppm	<b>18</b>	20	17	25
Copper	ppm	<b>4</b>	8	8	16
Lead	ppm	<b>1</b>	2	2	5
Tin	ppm	<b>&lt;1</b>	<1	<1	3
Aluminum	ppm	<b>5</b>	7	9	25
Chromium	ppm	<b>&lt;1</b>	2	2	3
Molybdenum	ppm	<b>64</b>	61	53	10
Nickel	ppm	<b>&lt;1</b>	3	2	2
Titanium	ppm	<b>0</b>	0	<1	<1
Silver	ppm	<b>0</b>	0	<1	<1
Manganese	ppm	<b>&lt;1</b>	<1	<1	1
Vanadium	ppm	<b>0</b>	0	0	<1

### ADDITIVES

Calcium	ppm	<b>1191</b>	1068	1277	2205
Magnesium	ppm	<b>1054</b>	902	797	118
Zinc	ppm	<b>1399</b>	1252	1135	1113
Phosphorus	ppm	<b>1131</b>	1039	1022	896
Barium	ppm	<b>0</b>	0	0	<1
Boron	ppm	<b>0</b>	6	10	22

### 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 acceptable for the time in service.

**Depot:** VP99031103  
**Unique No:** 11030911  
**Signed:** Sean Felton  
**Report Date:** 17 May 2024

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**VOLVO  
PENTA**

## GRAPHS

