

# OIL ANALYSIS REPORT

**VOLVO  
PENTA**

## NADINE URUIOLI 2300552 SILVER SEAS VOLVO PENTA D6-435D-F A971452 - PORT DIESEL ENGINE

**Sample No:** VPA059539  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

### SAMPLE INFORMATION

Sample Number	<b>VPA059539</b>	VPA029716	VPA027198	---
Sample Date	<b>01 Nov 2023</b>	26 Jul 2021	20 Sep 2019	---
Machine Hours	<b>886</b>	0	408	---
Oil Hours	<b>886</b>	0	0	---
Oil Changed	<b>Changed</b>	Changed	Not Changd	---
Sample Status	<b>NORMAL</b>	ATTENTION	ATTENTION	---

**Helmut's Marine Service**  
 619 Canal Street  
 SAN RAFAEL, CA  
 US 94901-3545  
 Contact: NADINE URUIOLI  
 SERVICE@HELMUTSMARINE.COM  
 T: x:  
 F: x:

### OIL CONDITION

Visc @ 100°C	cSt	<b>13.9</b>	14.3	13.8	---
Base Number (BN)	mg KOH/g	<b>9.0</b>	---	---	---
Oxidation (PA)	%	<b>53</b>	71	55	---

### CONTAMINATION

Soot %	%	<b>0.1</b>	0.5	0.8	---
Nitration (PA)	%	<b>58</b>	79	82	---
Sulfation (PA)	%	<b>52</b>	62	54	---
Glycol	%	<b>NEG</b>	NEG	NEG	---
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	---
Silicon	ppm	<b>4</b>	7	21	---
Sodium	ppm	<b>2</b>	1	3	---
Potassium	ppm	<b>2</b>	<1	8	---

### 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

### WEAR METALS

Iron	ppm	<b>9</b>	23	41	---
Copper	ppm	<b>3</b>	20	32	---
Lead	ppm	<b>0</b>	2	5	---
Tin	ppm	<b>0</b>	<1	0	---
Aluminum	ppm	<b>2</b>	<1	16	---
Chromium	ppm	<b>&lt;1</b>	1	3	---
Molybdenum	ppm	<b>27</b>	64	43	---
Nickel	ppm	<b>&lt;1</b>	▲ 5	▲ 6	---
Titanium	ppm	<b>0</b>	<1	<1	---
Silver	ppm	<b>0</b>	<1	0	---
Manganese	ppm	<b>0</b>	<1	2	---
Vanadium	ppm	<b>0</b>	0	0	---

### ADDITIVES

Calcium	ppm	<b>1213</b>	1129	1060	---
Magnesium	ppm	<b>691</b>	952	1026	---
Zinc	ppm	<b>798</b>	1189	1249	---
Phosphorus	ppm	<b>719</b>	1080	1112	---
Barium	ppm	<b>5</b>	0	<1	---
Boron	ppm	<b>140</b>	4	3	---

**Depot:** VP152741  
**Unique No:** 10729256  
**Signed:** Doug Bogart  
**Report Date:** 08 Nov 2023

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## GRAPHS

