

# OIL ANALYSIS REPORT



## NADINE URUIOLI OUTER LIMITS VOLVO PENTA D11B1-A MP 7011366155 - PORT DIESEL ENGINE

**Sample No:** VPA055238  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

### SAMPLE INFORMATION

Sample Number	<b>VPA055238</b>	VPA033950	VPA033947	VPA033946
Sample Date	<b>01 Aug 2023</b>	01 Oct 2021	27 Jul 2021	08 Mar 2021
Machine Hours	<b>10907</b>	610	7989	7335
Oil Hours	<b>10907</b>	610	653	597
Oil Changed	<b>Not Chngd</b>	Changed	Changed	Changed
Sample Status	<b>ATTENTION</b>	NORMAL	ATTENTION	NORMAL

**Helmuts 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>▲ 12.28</b>	■ 12.5	▲ 12.1	■ 12.4
Base Number (BN)	mg KOH/g	<b>■ 7.9</b>	---	---	---
Oxidation (PA)	%	<b>47</b>	58	58	58

### CONTAMINATION

Soot %	%	<b>■ 0.1</b>	■ 0.1	■ 0.2	■ 0.2
Nitration (PA)	%	<b>58</b>	73	72	72
Sulfation (PA)	%	<b>48</b>	52	52	53
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>■ 3</b>	■ 1	■ 4	■ 4
Sodium	ppm	<b>■ 3</b>	■ 2	■ 3	■ 2
Potassium	ppm	<b>■ 4</b>	■ <1	■ 2	■ 13

### Diagnosis

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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

### WEAR METALS

Iron	ppm	<b>■ 3</b>	■ 3	■ 4	■ 5
Copper	ppm	<b>■ 9</b>	■ 13	■ 17	■ 17
Lead	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ 0
Tin	ppm	<b>■ 0</b>	■ <1	■ <1	■ 0
Aluminum	ppm	<b>■ &lt;1</b>	■ <1	■ 1	■ 1
Chromium	ppm	<b>■ 0</b>	■ <1	■ <1	■ <1
Molybdenum	ppm	<b>■ 13</b>	■ <1	■ 1	<1
Nickel	ppm	<b>■ 0</b>	■ 0	■ 0	■ <1
Titanium	ppm	<b>&lt;1</b>	■ 0	■ 0	■ <1
Silver	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Manganese	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ <1
Vanadium	ppm	<b>&lt;1</b>	0	0	0

### ADDITIVES

Calcium	ppm	<b>■ 1292</b>	■ 1495	■ 1488	■ 1334
Magnesium	ppm	<b>■ 754</b>	■ 677	■ 663	■ 764
Zinc	ppm	<b>■ 850</b>	■ 854	■ 832	■ 765
Phosphorus	ppm	<b>■ 709</b>	■ 753	■ 757	■ 720
Barium	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Boron	ppm	<b>■ 80</b>	■ 68	■ 65	■ 63

**Depot:** VP152741  
**Unique No:** 10588451  
**Signed:** Doug Bogart  
**Report Date:** 04 Aug 2023

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# VOLVO PENTA

## GRAPHS

