

# OIL ANALYSIS REPORT

# VOLVO PENTA

## PETER GENATT VOLVO PENTA 7011375319 - STARBOARD DIESEL ENGINE

Sample No: VPA036712

Oil Type: SHELL ROTELLA T 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA036712</b>	VPA043985	VPA032408	VPA023768
Sample Date	<b>18 Nov 2023</b>	08 Oct 2022	17 Oct 2020	19 Sep 2019
Machine Hours	<b>539</b>	485	333	238
Oil Hours	<b>539</b>	485	333	238
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

**Larry's Lighthouse Marina**  
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### OIL CONDITION

Visc @ 100°C	cSt	<b>13.7</b>	13.7	13.5	12.9
Base Number (BN)	mg KOH/g	<b>8.4</b>	9.2	---	---
Oxidation (PA)	%	<b>65</b>	74	69	82

### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.1</b>	0.2	0.3	0.1
Nitration (PA)	%	<b>48</b>	58	55	62
Sulfation (PA)	%	<b>56</b>	61	59	62
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>3</b>	3	5	8
Sodium	ppm	<b>&lt;1</b>	2	1	3
Potassium	ppm	<b>6</b>	7	6	8

### 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 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>&lt;1</b>	3	6	5
Copper	ppm	<b>7</b>	10	17	87
Lead	ppm	<b>0</b>	<1	1	<1
Tin	ppm	<b>&lt;1</b>	<1	<1	0
Aluminum	ppm	<b>&lt;1</b>	2	1	1
Chromium	ppm	<b>0</b>	<1	<1	<1
Molybdenum	ppm	<b>0</b>	5	8	40
Nickel	ppm	<b>0</b>	0	<1	0
Titanium	ppm	<b>0</b>	0	0	<1
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>&lt;1</b>	<1	<1	<1
Vanadium	ppm	<b>0</b>	<1	0	0

### ADDITIVES

Calcium	ppm	<b>2033</b>	2068	2130	1871
Magnesium	ppm	<b>16</b>	37	119	498
Zinc	ppm	<b>1163</b>	1129	1155	872
Phosphorus	ppm	<b>929</b>	962	1018	769
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>180</b>	161	166	20

**Depot:** VP610438  
**Unique No:** 10792813  
**Signed:** Don Baldrige  
**Report Date:** 20 Dec 2023

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## GRAPHS

