

# OIL ANALYSIS REPORT



## THOMAS MITCHELL 7719059 VOLVO PENTA A269248 - STARBOARD DIESEL ENGINE

**Sample No:** VPA044474  
**Oil Type:** VOLVO VDS-4.5 Premium Motor Oil 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA044474</b>	VPA046139	VPA041626	VPA047446
Sample Date	<b>01 May 2024</b>	20 Mar 2023	25 Jul 2022	03 Apr 2022
Machine Hours	<b>743</b>	651	608	608
Oil Hours	<b>96</b>	651	0	0
Oil Changed	<b>Changed</b>	Changed	Not Changd	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

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### OIL CONDITION

Visc @ 100°C	cSt	<b>13.0</b>	13.6	13.8	13.7
Base Number (BN)	mg KOH/g	<b>9.8</b>	9.8	11.0	11.5
Oxidation (PA)	%	<b>56</b>	55	59	65

### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.3</b>	0.3	0.1	0.6
Nitration (PA)	%	<b>48</b>	45	43	65
Sulfation (PA)	%	<b>53</b>	54	57	66
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>6</b>	7	6	7
Sodium	ppm	<b>&lt;1</b>	<1	<1	3
Potassium	ppm	<b>2</b>	1	1	4

### 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 suitable for further service.

### WEAR METALS

Iron	ppm	<b>14</b>	12	8	35
Copper	ppm	<b>3</b>	1	1	6
Lead	ppm	<b>&lt;1</b>	0	<1	1
Tin	ppm	<b>&lt;1</b>	0	<1	<1
Aluminum	ppm	<b>2</b>	2	1	7
Chromium	ppm	<b>1</b>	<1	<1	2
Molybdenum	ppm	<b>65</b>	67	64	110
Nickel	ppm	<b>2</b>	<1	<1	3
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	<1

### ADDITIVES

Calcium	ppm	<b>1122</b>	1153	1130	1555
Magnesium	ppm	<b>992</b>	969	925	793
Zinc	ppm	<b>1271</b>	1264	1154	1024
Phosphorus	ppm	<b>1160</b>	1005	942	822
Barium	ppm	<b>&lt;1</b>	0	0	0
Boron	ppm	<b>17</b>	42	49	319

**Depot:** VP99031103  
**Unique No:** 11031007  
**Signed:** Sean Felton  
**Report Date:** 17 May 2024

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**VOLVO  
PENTA**

## GRAPHS

