



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**DAVE HOLT [PATRICK/502207-5250]**

Machine Id  
**VOLVO PENTA A657971**

Component  
**Starboard Diesel Engine**

Fluid  
**VOLVO VDS-4.5 Premium Motor Oil 15W40 (--- GAL)**

**RECOMMENDATION**

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VPA062546</b>	VPA044970	---
Sample Date		Client Info		<b>21 May 2024</b>	07 Jul 2023	---
Machine Age	hrs	Client Info		<b>467</b>	418	---
Oil Age	hrs	Client Info		<b>0</b>	0	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>NORMAL</b>	NORMAL	---

**WEAR**

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>80	<b>10</b>	10	---
Chromium	ppm	ASTM D5185m	>6	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	2	---
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	2	---
Lead	ppm	ASTM D5185m	>95	<b>&lt;1</b>	2	---
Copper	ppm	ASTM D5185m	>85	<b>6</b>	6	---
Tin	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

**CONTAMINATION**

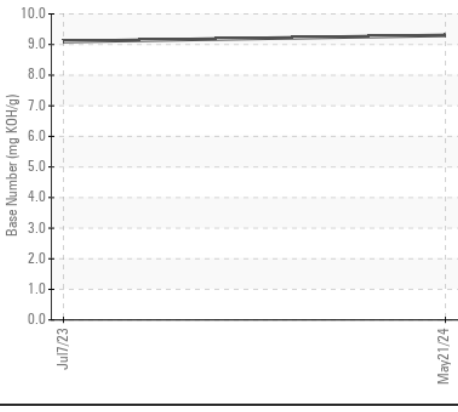
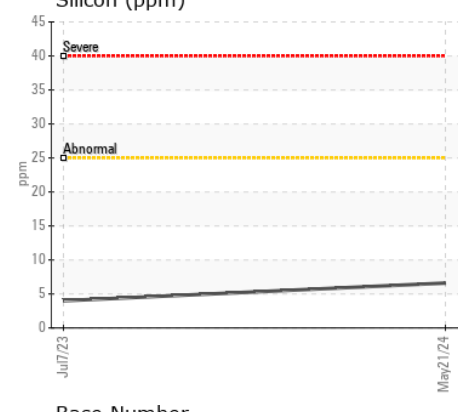
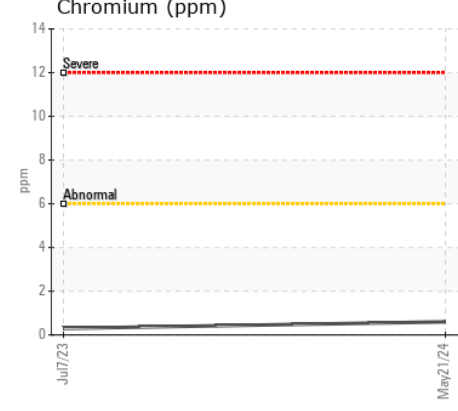
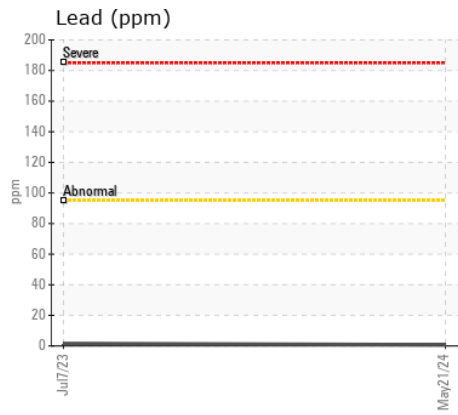
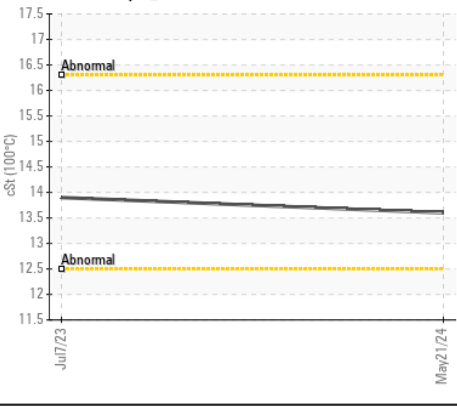
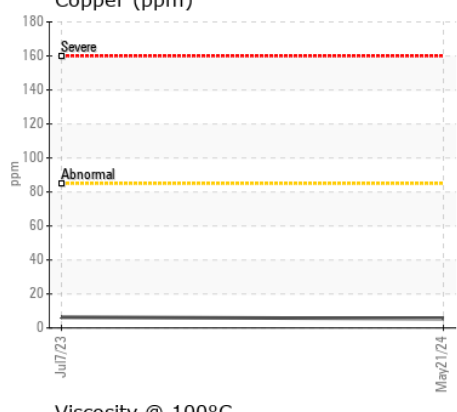
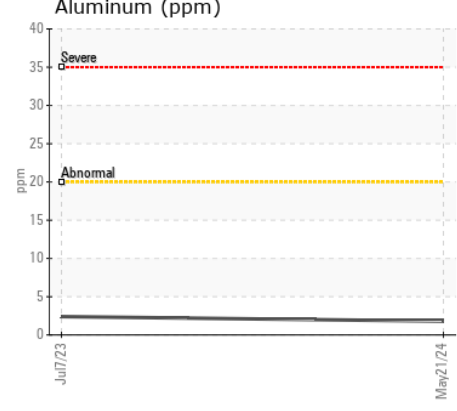
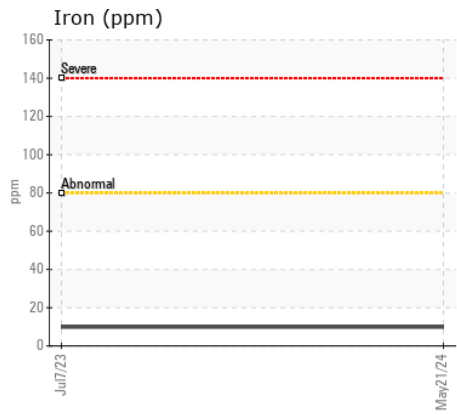
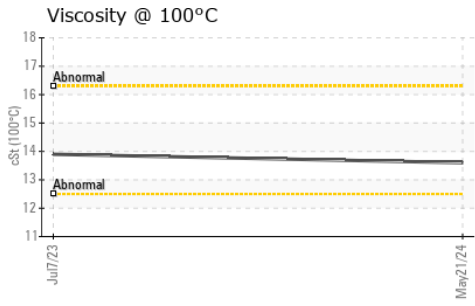
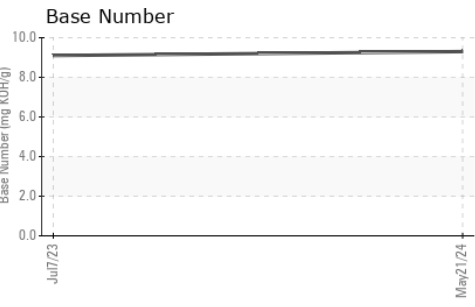
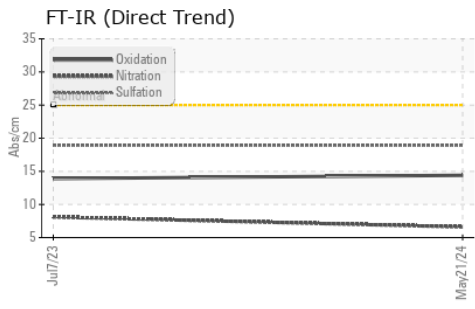
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>7</b>	4	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	6	---
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	---
Water		WC Method	>0.1	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844		<b>0.2</b>	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.6</b>	8.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.9</b>	18.9	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	---

**FLUID CONDITION**

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

Sodium	ppm	ASTM D5185m		<b>1</b>	3	---
Boron	ppm	ASTM D5185m		<b>10</b>	72	---
Barium	ppm	ASTM D5185m		<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>54</b>	16	---
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Magnesium	ppm	ASTM D5185m		<b>904</b>	791	---
Calcium	ppm	ASTM D5185m		<b>1144</b>	1286	---
Phosphorus	ppm	ASTM D5185m		<b>1013</b>	783	---
Zinc	ppm	ASTM D5185m		<b>1240</b>	946	---
Sulfur	ppm	ASTM D5185m		<b>3610</b>	3746	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.4</b>	13.9	---
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.3</b>	9.1	---
Visc @ 100°C	cSt	ASTM D445		<b>13.6</b>	13.9	---



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA062546  
**Lab Number** : 06188740  
**Unique Number** : 11045492  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Received** : 23 May 2024  
**Tested** : 24 May 2024  
**Diagnosed** : 28 May 2024 - Sean Felton

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To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)