



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**EVAN LIN [DANIEL/502923]**

Machine Id  
**VOLVO PENTA A1085685**

Component  
**Starboard Diesel Engine**

Fluid  
**VOLVO PENTA SAE 15W40 (6 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VPA053012</b>	VPA045676	VPA035142
Sample Date		Client Info		<b>17 Apr 2024</b>	24 May 2023	13 Jan 2022
Machine Age	hrs	Client Info		<b>287</b>	249	185
Oil Age	hrs	Client Info		<b>0</b>	0	185
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>80	<b>3</b>	10	28
Chromium	ppm	ASTM D5185m	>6	<b>&lt;1</b>	<1	2
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	1	4
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	3	6
Lead	ppm	ASTM D5185m	>95	<b>&lt;1</b>	2	7
Copper	ppm	ASTM D5185m	>85	<b>2</b>	4	19
Tin	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	4
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

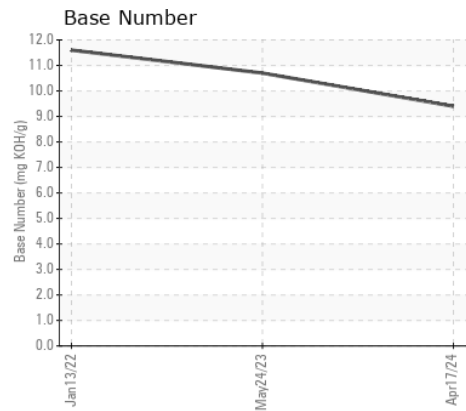
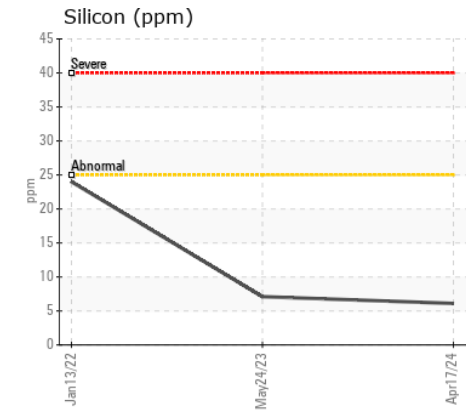
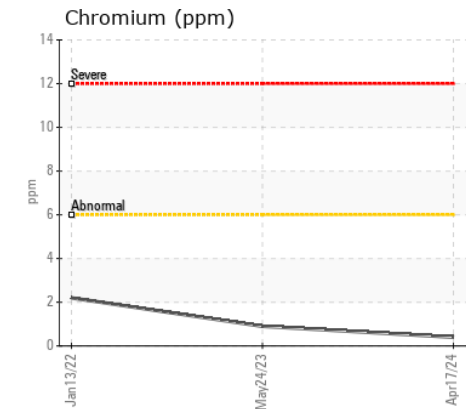
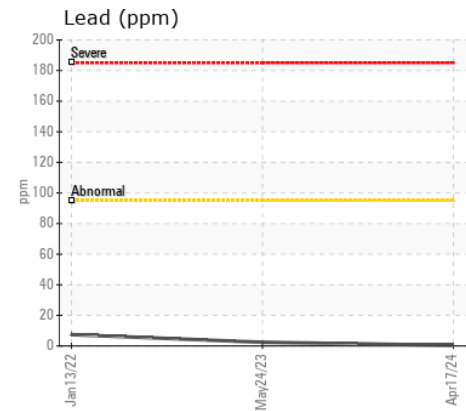
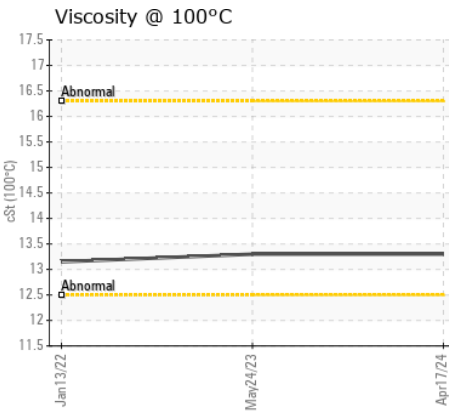
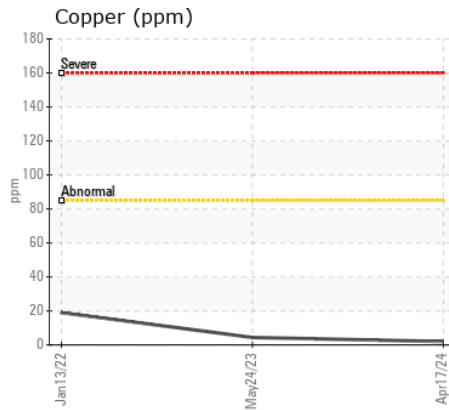
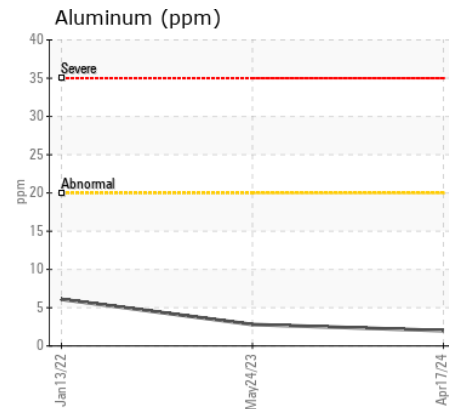
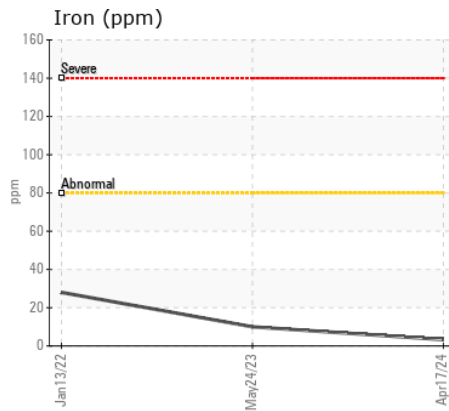
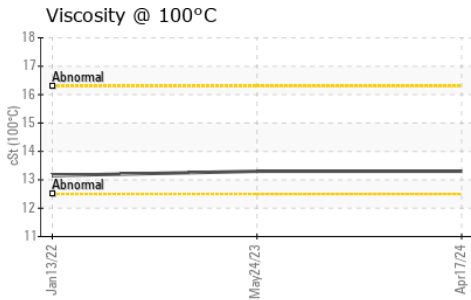
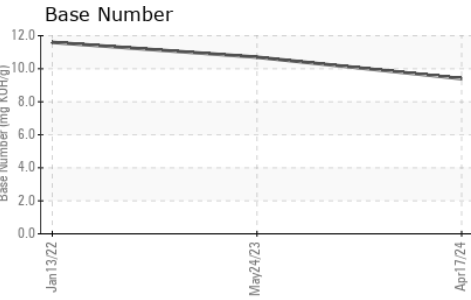
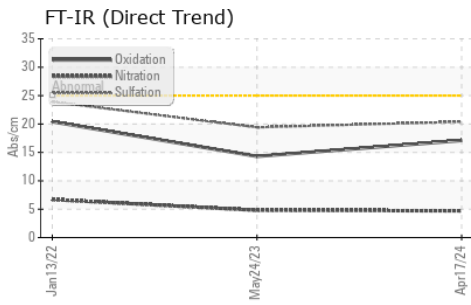
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>6</b>	7	24
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	3
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>4.7</b>	4.8	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	19.4	23.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	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>0</b>	2	4
Boron	ppm	ASTM D5185m		<b>50</b>	4	47
Barium	ppm	ASTM D5185m		<b>2</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>48</b>	58	42
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>630</b>	958	559
Calcium	ppm	ASTM D5185m		<b>1391</b>	1099	1657
Phosphorus	ppm	ASTM D5185m		<b>887</b>	1038	978
Zinc	ppm	ASTM D5185m		<b>979</b>	1256	1201
Sulfur	ppm	ASTM D5185m		<b>2918</b>	3522	3401
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.1</b>	14.3	20.4
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.4</b>	10.7	11.6
Visc @ 100°C	cSt	ASTM D445		<b>13.3</b>	13.3	13.15



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA053012 **Received** : 10 May 2024  
**Lab Number** : 06176427 **Tested** : 13 May 2024  
**Unique Number** : 11022480 **Diagnosed** : 14 May 2024 - Sean Felton  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Endor Marine LLC - Coastal Marine - 152124**  
 4300 11th Ave. NW  
 SEATTLE, WA  
 US 98107  
 Contact: WILLOW YANARELLA  
 service@coastalmarineengine.com  
 T: (206)784-3703  
 F: (206)784-8823

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)