



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
STAN DEAL [SR00100761]

Machine Id
VOLVO PENTA A253496

Component
Starboard Diesel Engine

Fluid
VOLVO VDS-4.5 Premium Motor Oil 15W40 (5 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA058801	VPA046925	VPA017777
Sample Date		Client Info		27 Jun 2024	29 Aug 2023	11 Feb 2019
Machine Age	hrs	Client Info		0	912	333
Oil Age	hrs	Client Info		0	0	60
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Filter Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	14	12	12
Chromium	ppm	ASTM D5185m	>6	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>95	<1	0	<1
Copper	ppm	ASTM D5185m	>85	5	4	4
Tin	ppm	ASTM D5185m	>9	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

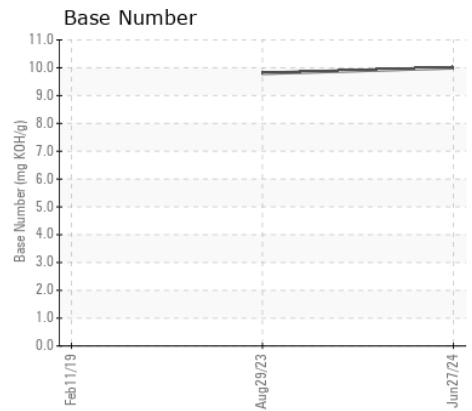
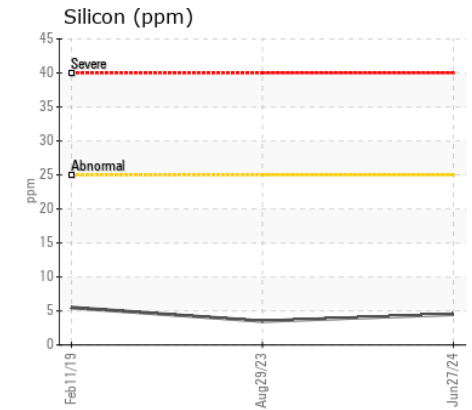
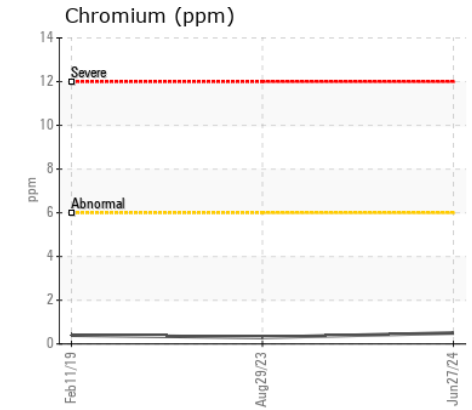
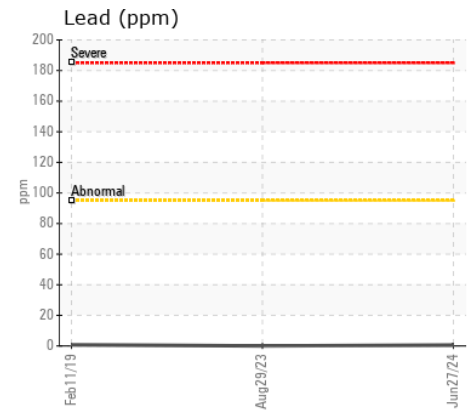
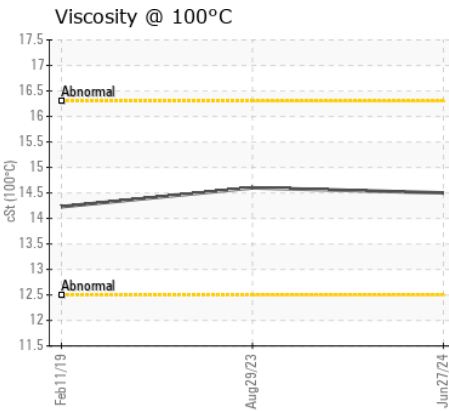
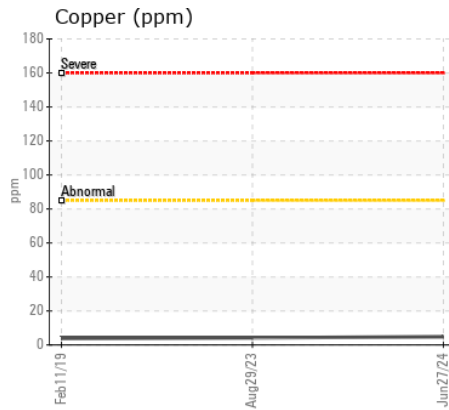
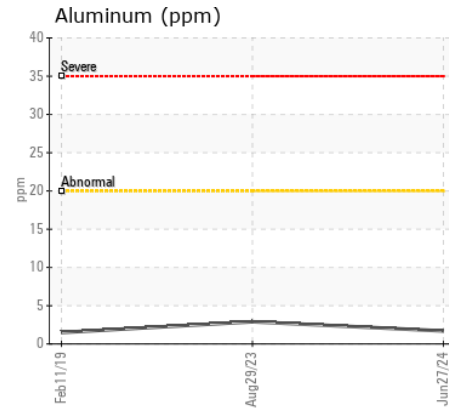
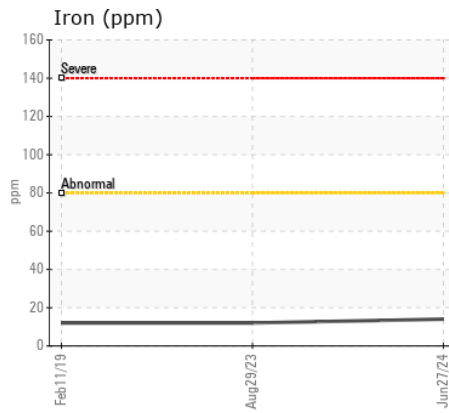
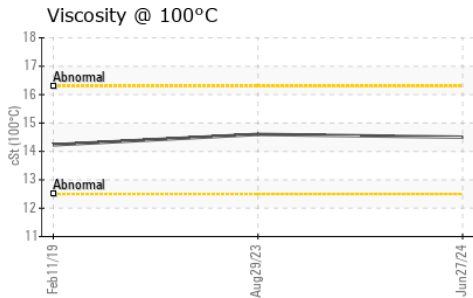
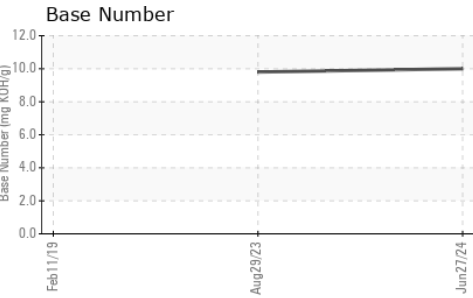
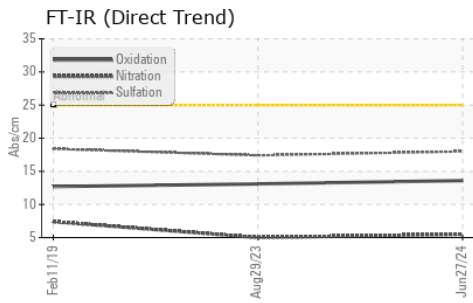
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	4	6
Potassium	ppm	ASTM D5185m	>20	0	0	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	5.5	5.0	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	17.4	18.4
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	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		<1	2	2
Boron	ppm	ASTM D5185m		4	7	107
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		57	58	9
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		1050	1005	599
Calcium	ppm	ASTM D5185m		1162	1077	1237
Phosphorus	ppm	ASTM D5185m		1125	1064	658
Zinc	ppm	ASTM D5185m		1371	1276	702
Sulfur	ppm	ASTM D5185m		4076	3853	3210
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	13.1	12.7
Base Number (BN)	mg KOH/g	ASTM D2896		10.0	9.8	---
Visc @ 100°C	cSt	ASTM D445		14.5	14.6	14.23



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA058801 **Received** : 01 Jul 2024
Lab Number : 06224261 **Tested** : 02 Jul 2024
Unique Number : 11102458 **Diagnosed** : 02 Jul 2024 - Jonathan Hester
Test Package : MOB 1 (Additional Tests: TBN)

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 Kent, WA
 US 98032
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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)