



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

NADINE URCIUOLI [SOLANO SHERIFF]

Machine Id

VOLVO PENTA A1166302

Component

Center Diesel Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (5 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA052307	VPA055565	---
Sample Date		Client Info		04 Apr 2024	29 Sep 2023	---
Machine Age	hrs	Client Info		406	209	---
Oil Age	hrs	Client Info		406	209	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	19	17	---
Chromium	ppm	ASTM D5185m	>6	1	1	---
Nickel	ppm	ASTM D5185m	>2	2	3	---
Titanium	ppm	ASTM D5185m	>2	<1	0	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>20	2	4	---
Lead	ppm	ASTM D5185m	>95	2	3	---
Copper	ppm	ASTM D5185m	>85	8	12	---
Tin	ppm	ASTM D5185m	>9	2	2	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

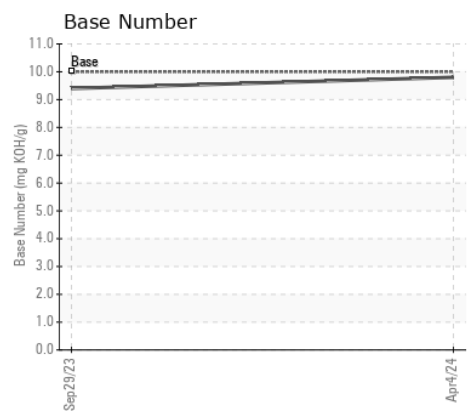
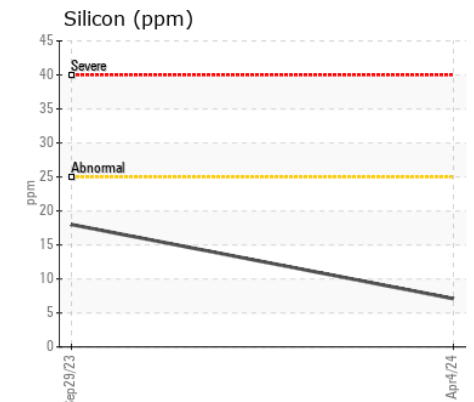
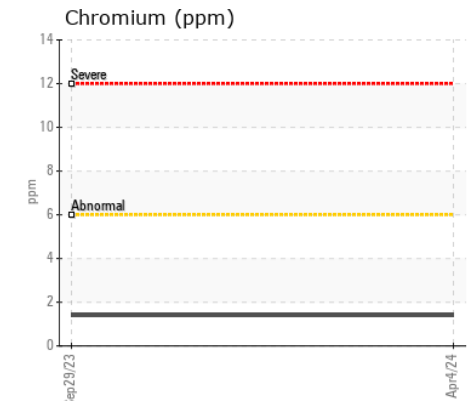
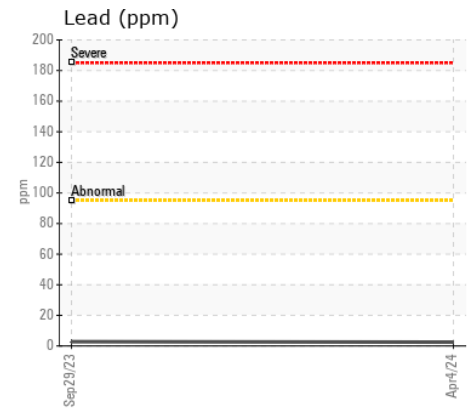
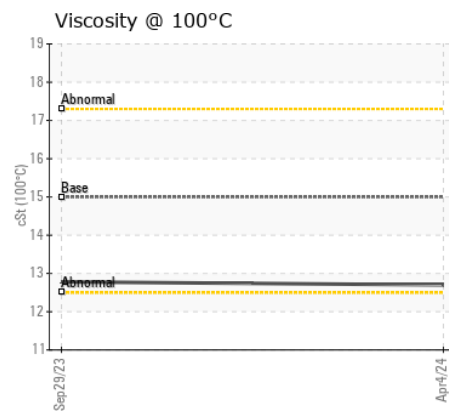
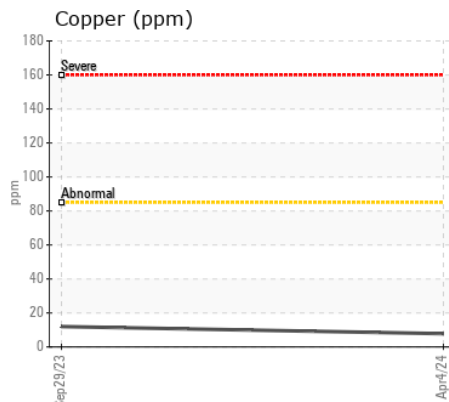
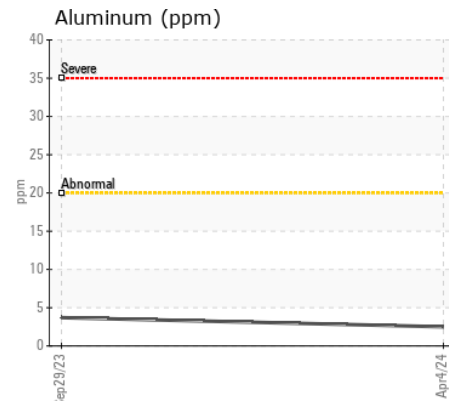
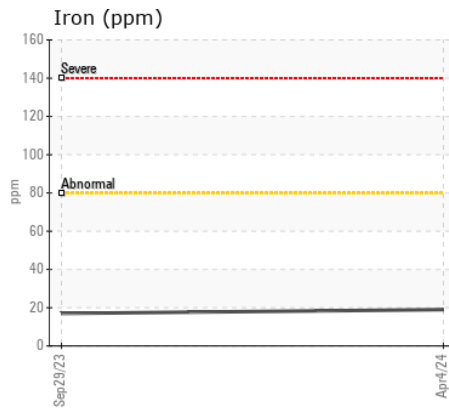
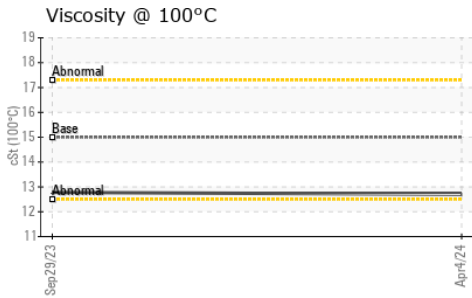
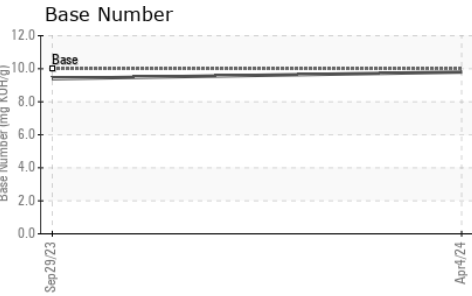
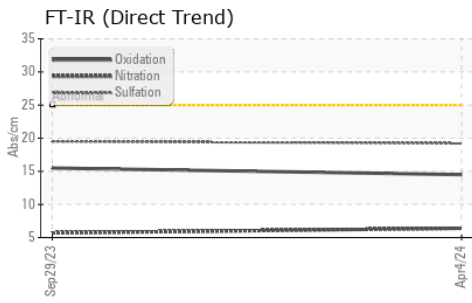
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	7	18	---
Potassium	ppm	ASTM D5185m	>20	2	<1	---
Fuel		WC Method	>4.0	<1.0	<1.0	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844		0.4	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	6.4	5.7	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	19.5	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---

FLUID CONDITION

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.

Sodium	ppm	ASTM D5185m		2	3	---
Boron	ppm	ASTM D5185m	2.5	2	14	---
Barium	ppm	ASTM D5185m	0.0	1	0	---
Molybdenum	ppm	ASTM D5185m	0.7	62	56	---
Manganese	ppm	ASTM D5185m	0.0	<1	<1	---
Magnesium	ppm	ASTM D5185m	256	1007	864	---
Calcium	ppm	ASTM D5185m	2057	1146	1259	---
Phosphorus	ppm	ASTM D5185m	935	1061	972	---
Zinc	ppm	ASTM D5185m	1223	1237	1194	---
Sulfur	ppm	ASTM D5185m	4079	3442	3148	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	15.5	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.8	9.4	---
Visc @ 100°C	cSt	ASTM D445	15.0	12.7	12.78	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA052307 **Received** : 16 Apr 2024
Lab Number : 06149752 **Tested** : 17 Apr 2024
Unique Number : 10979830 **Diagnosed** : 18 Apr 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

Helmuts Marine Service
 619 Canal Street
 SAN RAFAEL, CA
 US 94901-3545

Contact: NADINE URCIUOLI
 SERVICE@HELMUTSMARINE.COM

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)

T: x:
 F: x: