



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

NADINE URCIUOLI [RACHAEL YOUSEFF]

Machine Id

VOLVO PENTA 5102166660A

Component

Center Diesel Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (1 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA061292	VPA049570	VPA042321
Sample Date		Client Info		26 Jun 2024	14 Sep 2023	27 Sep 2022
Machine Age	hrs	Client Info		215	185	159
Oil Age	hrs	Client Info		215	185	159
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	6	5	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	2	<1	<1
Lead	ppm	ASTM D5185m	>40	0	<1	3
Copper	ppm	ASTM D5185m	>330	2	1	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

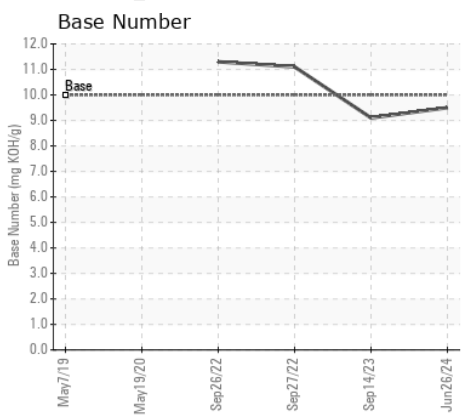
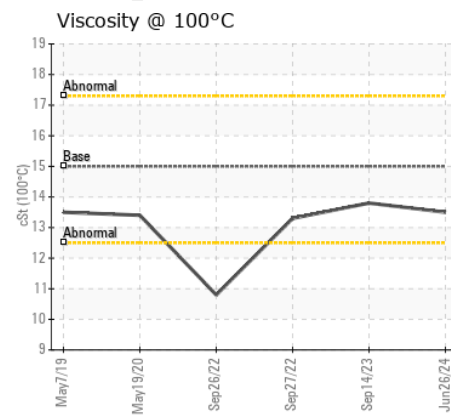
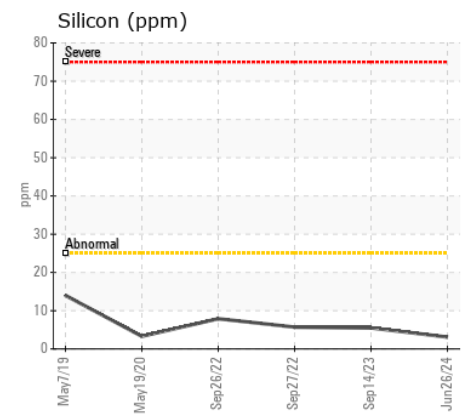
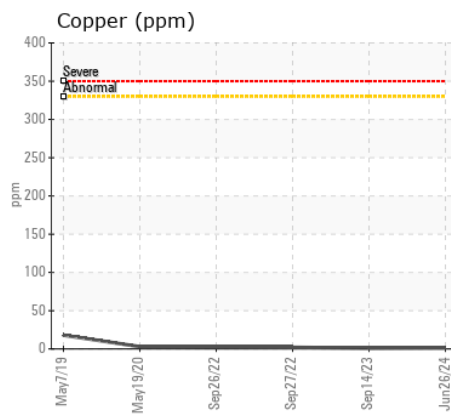
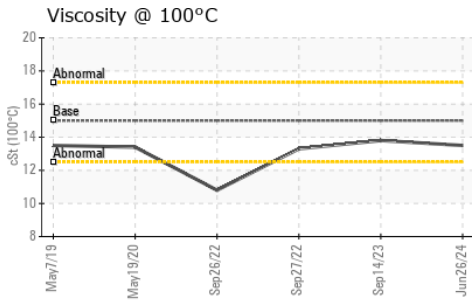
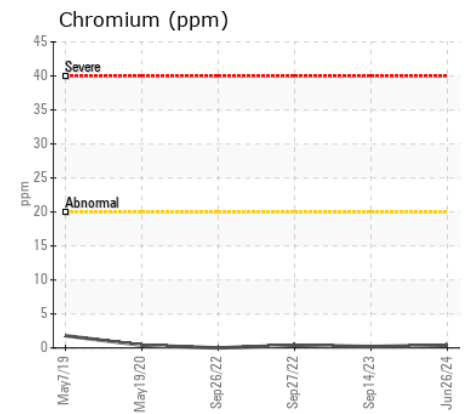
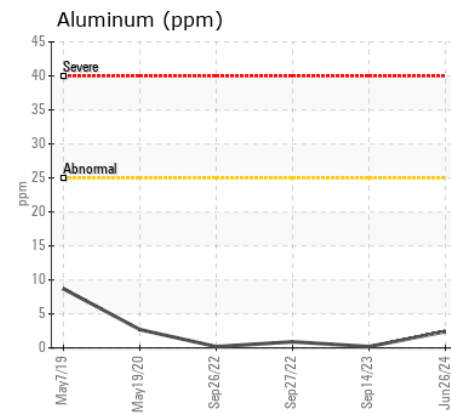
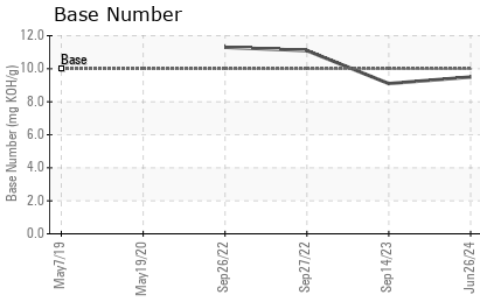
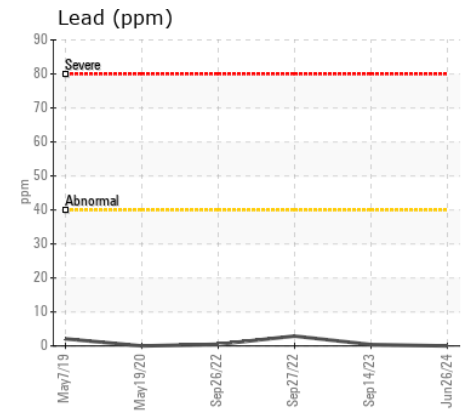
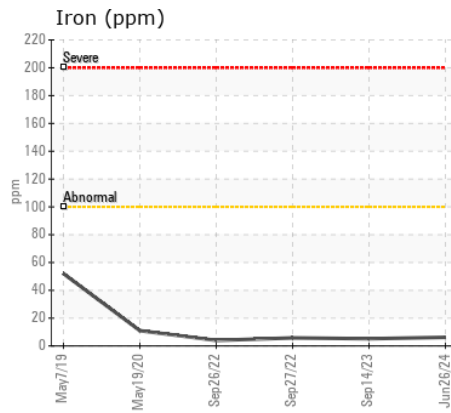
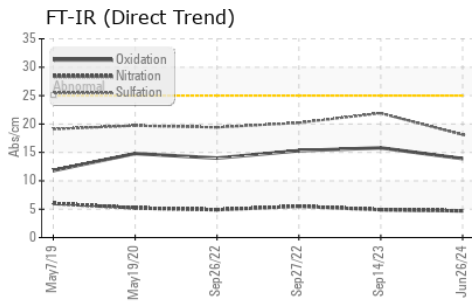
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	6	6
Potassium	ppm	ASTM D5185m	>20	1	<1	<1
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	4.7	4.9	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.1	21.9	20.2
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	>0.2	NEG	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	<1	2
Boron	ppm	ASTM D5185m	2.5	24	371	0
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	0.7	60	122	55
Manganese	ppm	ASTM D5185m	0.0	0	<1	1
Magnesium	ppm	ASTM D5185m	256	884	744	915
Calcium	ppm	ASTM D5185m	2057	1015	1537	994
Phosphorus	ppm	ASTM D5185m	935	898	730	998
Zinc	ppm	ASTM D5185m	1223	1108	897	1167
Sulfur	ppm	ASTM D5185m	4079	2625	3128	3285
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	15.8	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.5	9.1	11.1
Visc @ 100°C	cSt	ASTM D445	15.0	13.5	13.8	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA061292 **Received** : 03 Jul 2024  
**Lab Number** : 06226950 **Tested** : 03 Jul 2024  
**Unique Number** : 11110443 **Diagnosed** : 05 Jul 2024 - Don Baldridge  
**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