



# VOLVO

## OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**VOLVO L90H 623556**

Component  
**Diesel Engine**

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

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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>VCP442622</b>	VCP386035	VCP297929
Sample Date		Client Info		<b>07 Feb 2024</b>	07 Nov 2022	21 Jun 2021
Machine Age	hrs	Client Info		<b>5387</b>	4897	3976
Oil Age	hrs	Client Info		<b>0</b>	500	500
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

### WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>12</b>	10	9
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>▲ 20</b>	8	2
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>15	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

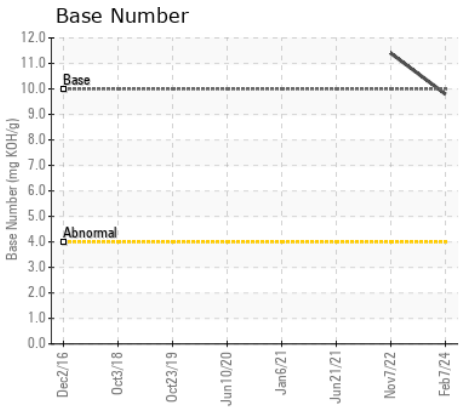
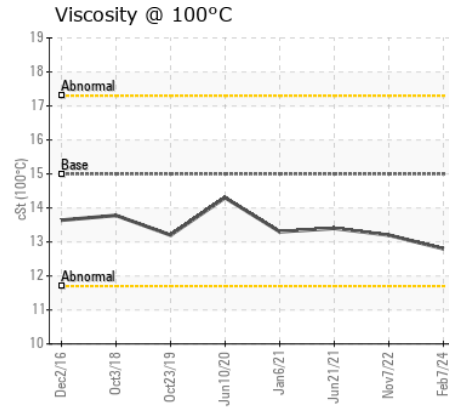
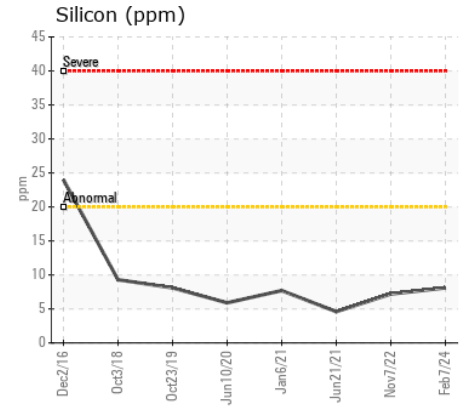
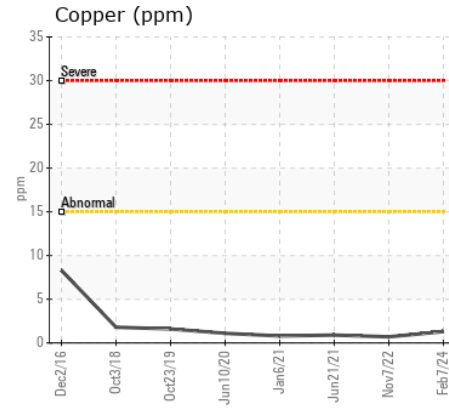
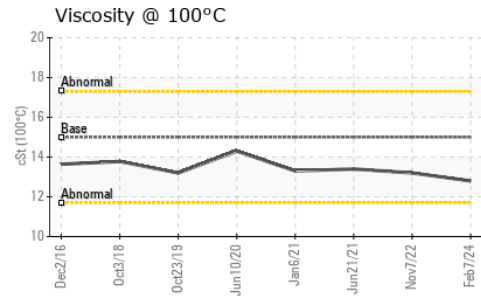
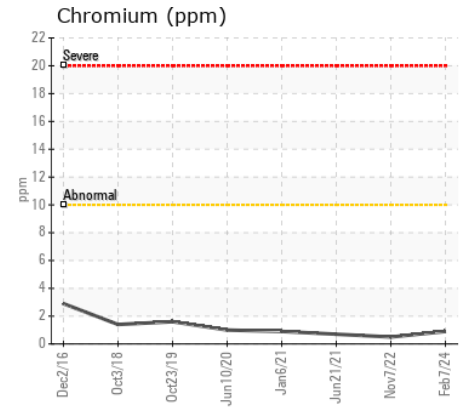
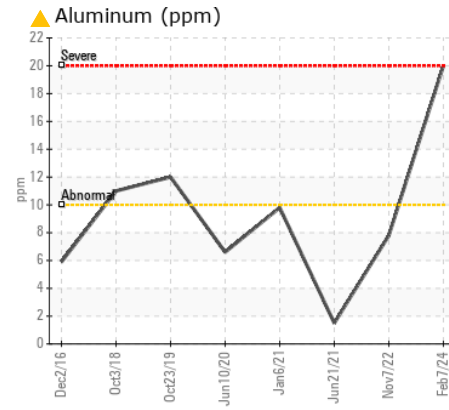
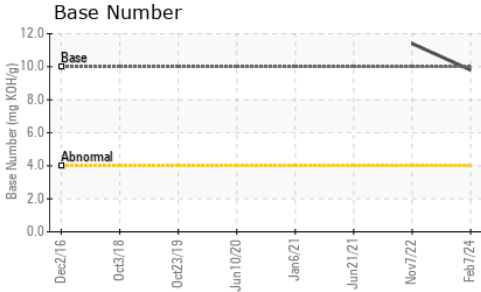
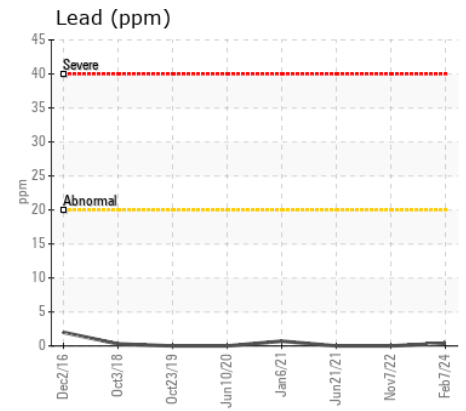
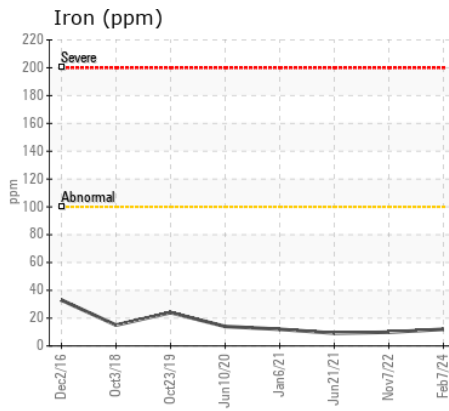
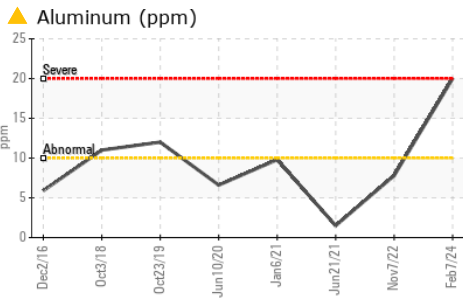
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>8</b>	7	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	1
Fuel		WC Method	>6.0	<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	>3	<b>0.3</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.3</b>	8.9	11.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.5</b>	23.3	22.9
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>0</b>	1	3
Boron	ppm	ASTM D5185m	2.5	<b>36</b>	38	31
Barium	ppm	ASTM D5185m	0.0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m	0.7	<b>46</b>	45	31
Manganese	ppm	ASTM D5185m	0.0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	256	<b>500</b>	500	565
Calcium	ppm	ASTM D5185m	2057	<b>1522</b>	1804	1592
Phosphorus	ppm	ASTM D5185m	935	<b>872</b>	985	885
Zinc	ppm	ASTM D5185m	1223	<b>1124</b>	1161	974
Sulfur	ppm	ASTM D5185m	4079	<b>2862</b>	3294	2578
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.7</b>	21.8	20.9
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>9.8</b>	11.4	---
Visc @ 100°C	cSt	ASTM D445	15.0	<b>12.8</b>	13.2	13.4



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP442622 **Received** : 08 Feb 2024  
**Lab Number** : 06083323 **Tested** : 08 Feb 2024  
**Unique Number** : 10870768 **Diagnosed** : 09 Feb 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**RIPA AND ASSOCIATES**  
 10149 FISHER AVENUE  
 TAMPA, FL  
 US 33619  
 Contact: ROBERT TURNER  
 rturner@ripatampa.com  
 T:  
 F:

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)