



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
VOLVO L90H 627174
Component
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		ML0002022	ML0000038	---
Sample Date		Client Info		01 Jul 2024	26 Feb 2024	---
Machine Age	hrs	Client Info		1147	534	---
Oil Age	hrs	Client Info		613	534	---
Filter Age	hrs	Client Info		613	534	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	MARGINAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	19	33	---
Chromium	ppm	ASTM D5185m	>10	1	3	---
Nickel	ppm	ASTM D5185m	>10	0	<1	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>10	6	19	---
Lead	ppm	ASTM D5185m	>20	<1	1	---
Copper	ppm	ASTM D5185m	>15	2	9	---
Tin	ppm	ASTM D5185m	>10	0	3	---
Vanadium	ppm	ASTM D5185m		0	<1	---
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.

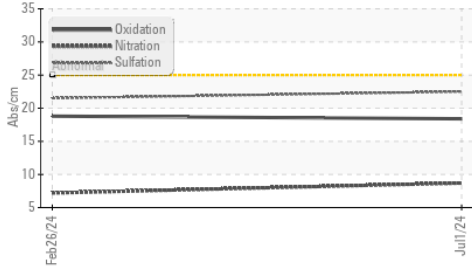
Silicon	ppm	ASTM D5185m	>20	9	20	---
Potassium	ppm	ASTM D5185m	>20	0	3	---
Fuel		WC Method	>6.0	<1.0	0.6	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	8.7	7.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	21.5	---
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

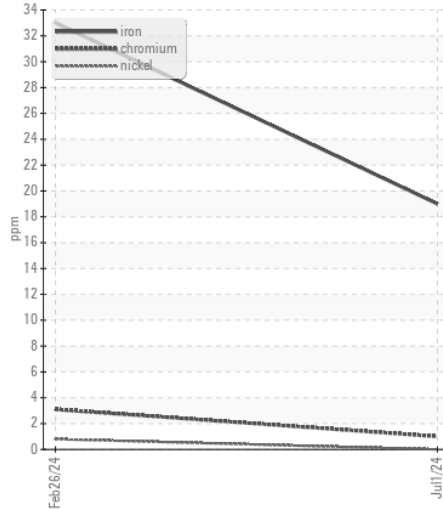
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		3	3	---
Boron	ppm	ASTM D5185m	2.5	150	44	---
Barium	ppm	ASTM D5185m	0.0	1	4	---
Molybdenum	ppm	ASTM D5185m	0.7	98	37	---
Manganese	ppm	ASTM D5185m	0.0	1	5	---
Magnesium	ppm	ASTM D5185m	256	603	553	---
Calcium	ppm	ASTM D5185m	2057	1722	1428	---
Phosphorus	ppm	ASTM D5185m	935	868	955	---
Zinc	ppm	ASTM D5185m	1223	984	1093	---
Sulfur	ppm	ASTM D5185m	4079	3104	3570	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.4	18.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	8.4	9.9	---
Visc @ 100°C	cSt	ASTM D445	15.0	13.0	▲ 12.3	---

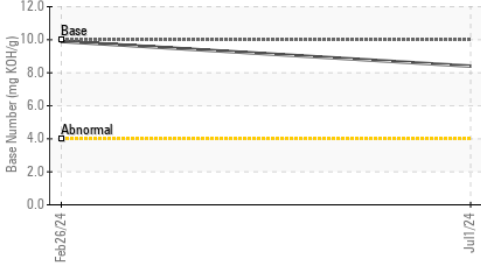
FT-IR (Direct Trend)



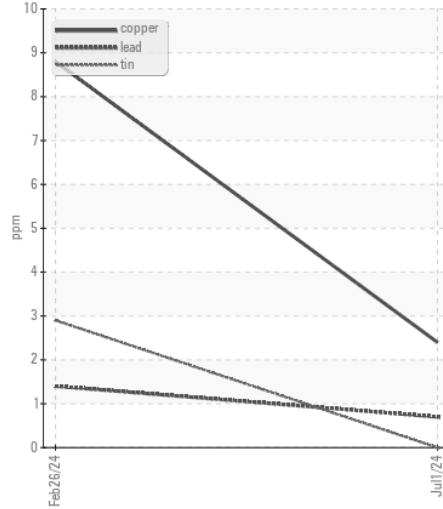
Ferrous Alloys



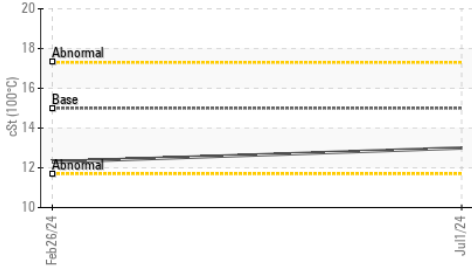
Base Number



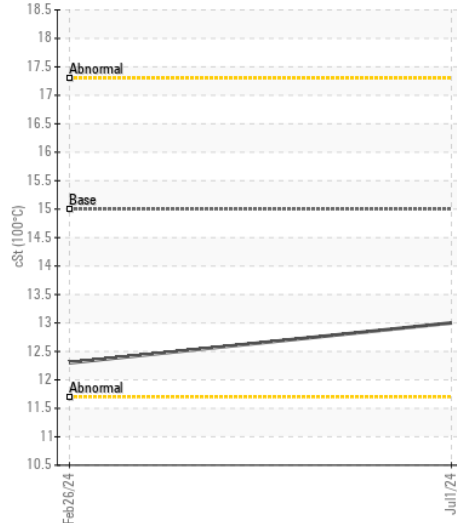
Non-ferrous Metals



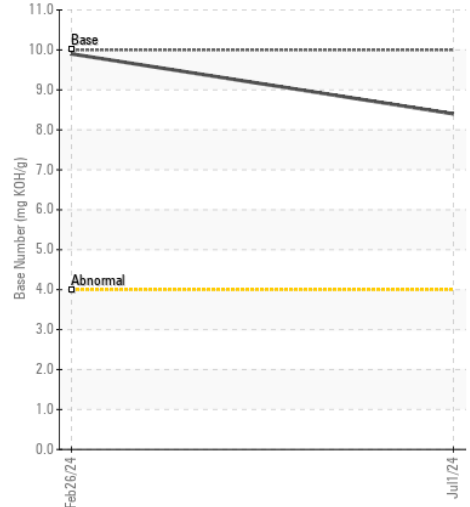
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ML0002022 **Received** : 11 Jul 2024
Lab Number : 06234229 **Tested** : 12 Jul 2024
Unique Number : 11123063 **Diagnosed** : 14 Jul 2024 - Don Baldrige
Test Package : CONST (Additional Tests: TBN)

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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)