



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
VOLVO L90H 624579

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		ML0002191	VCP414815	VCP423092
Sample Date		Client Info		01 Jul 2024	25 Sep 2023	27 Apr 2023
Machine Age	hrs	Client Info		9105	8177	7666
Oil Age	hrs	Client Info		928	0	0
Filter Age	hrs	Client Info		928	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	9	7	7
Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	2
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	4	4	3
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>15	<1	<1	0
Tin	ppm	ASTM D5185m	>10	0	1	0
Vanadium	ppm	ASTM D5185m		0	<1	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.

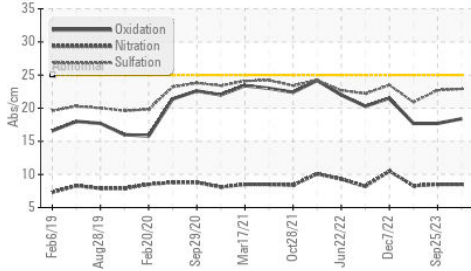
Silicon	ppm	ASTM D5185m	>20	7	8	5
Potassium	ppm	ASTM D5185m	>20	<1	3	<1
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	8.5	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.9	22.7	20.9
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

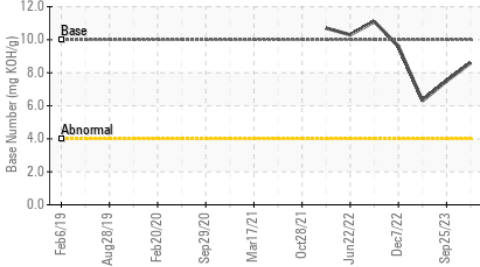
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		2	3	<1
Boron	ppm	ASTM D5185m	2.5	198	317	361
Barium	ppm	ASTM D5185m	0.0	<1	0	0
Molybdenum	ppm	ASTM D5185m	0.7	101	101	98
Manganese	ppm	ASTM D5185m	0.0	<1	0	<1
Magnesium	ppm	ASTM D5185m	256	590	443	526
Calcium	ppm	ASTM D5185m	2057	1733	1478	1714
Phosphorus	ppm	ASTM D5185m	935	920	1077	1140
Zinc	ppm	ASTM D5185m	1223	1041	1290	1463
Sulfur	ppm	ASTM D5185m	4079	3239	3311	4018
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.4	17.7	17.7
Base Number (BN)	mg KOH/g	ASTM D2896	10	8.6	7.5	6.3
Visc @ 100°C	cSt	ASTM D445	15.0	13.3	13.8	13.8

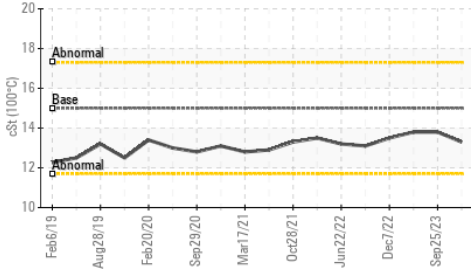
FT-IR (Direct Trend)



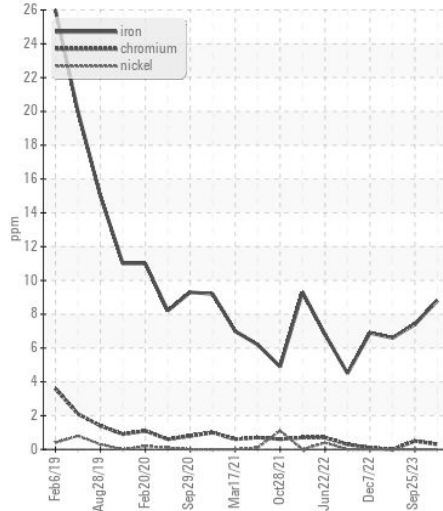
Base Number



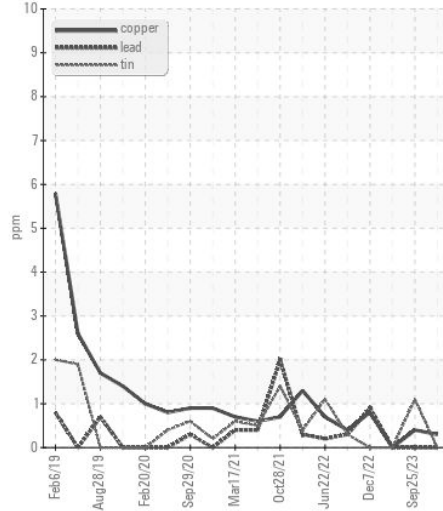
Viscosity @ 100°C



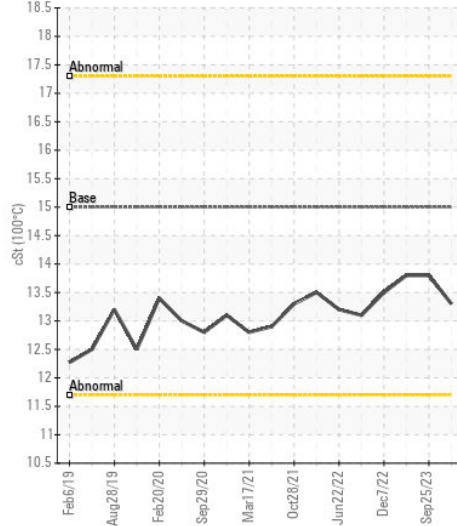
Ferrous Alloys



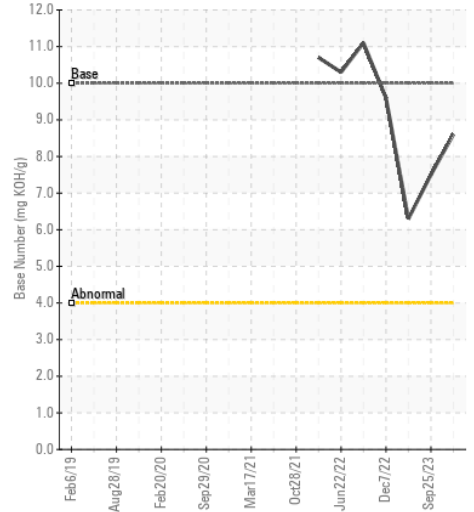
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ML0002191 **Received** : 11 Jul 2024
Lab Number : 06234230 **Tested** : 12 Jul 2024
Unique Number : 11123064 **Diagnosed** : 14 Jul 2024 - Don Baldrige
Test Package : CONST (Additional Tests: TBN)

IAA - INSURANCE AUTO AUCTIONS - METRO DC
 14149 BRANDYWINE RD
 BRANDYWINE, MD
 US 20613
 Contact:

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:
F: