



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
142010
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 10W-40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LM0000398	LM0000821	---
Sample Date		Client Info		25 Jun 2024	22 Feb 2024	---
Machine Age	hrs	Client Info		1151	422	---
Oil Age	hrs	Client Info		0	422	---
Filter Age	hrs	Client Info		0	422	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	5	12	---
Chromium	ppm	ASTM D5185m	>5	0	<1	---
Nickel	ppm	ASTM D5185m	>5	<1	0	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>15	1	4	---
Lead	ppm	ASTM D5185m	>30	<1	2	---
Copper	ppm	ASTM D5185m	>125	21	69	---
Tin	ppm	ASTM D5185m	>5	2	2	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

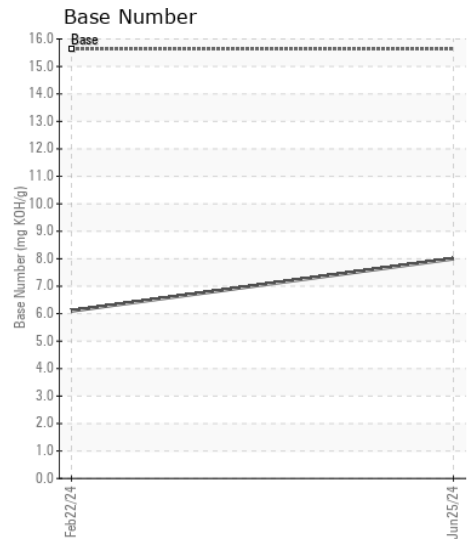
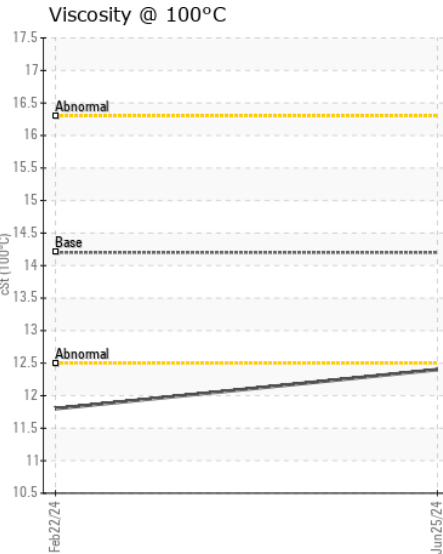
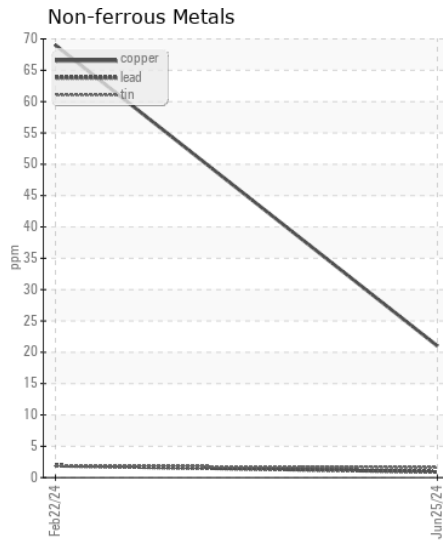
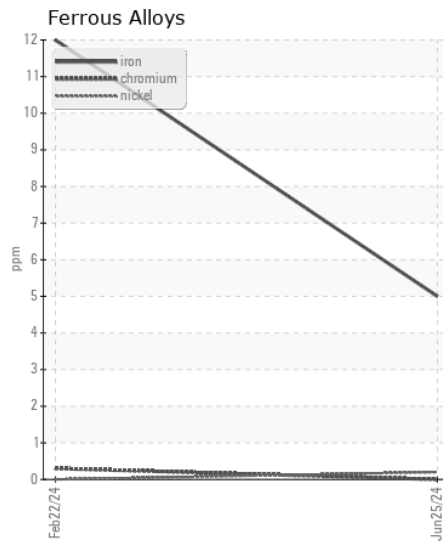
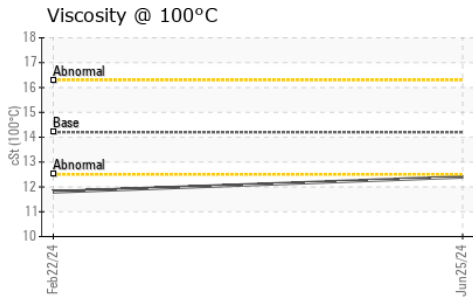
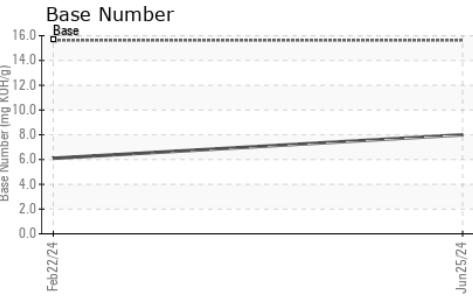
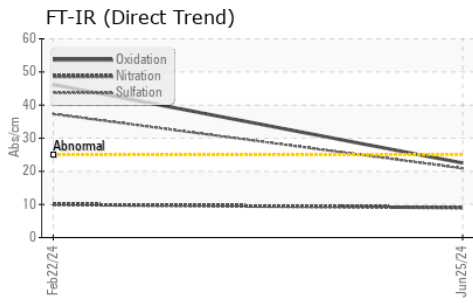
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	5	10	---
Potassium	ppm	ASTM D5185m	>20	3	1	---
Fuel	%	ASTM D3524	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.1	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	9.0	10.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	37.3	---
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	>0.2	NEG	NEG	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		2	1	---
Boron	ppm	ASTM D5185m	245	99	110	---
Barium	ppm	ASTM D5185m	0	3	22	---
Molybdenum	ppm	ASTM D5185m	0	3	44	---
Manganese	ppm	ASTM D5185m	<1	2	9	---
Magnesium	ppm	ASTM D5185m	36	866	928	---
Calcium	ppm	ASTM D5185m	4401	1294	1409	---
Phosphorus	ppm	ASTM D5185m	1067	789	769	---
Zinc	ppm	ASTM D5185m	1183	919	924	---
Sulfur	ppm	ASTM D5185m	2591	4262	2705	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.5	46.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	15.63	8.0	6.1	---
Visc @ 100°C	cSt	ASTM D445	14.2	12.4	11.8	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LM0000398 **Received** : 05 Jul 2024
Lab Number : 06228220 **Tested** : 08 Jul 2024
Unique Number : 11111713 **Diagnosed** : 08 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, 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)