



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR L586 069044-1761**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 5W40 (11 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0267647</b>	LHMC155691	---
Sample Date		Client Info		<b>22 Nov 2023</b>	27 Oct 2022	---
Machine Age	hrs	Client Info		<b>1985</b>	760	---
Oil Age	hrs	Client Info		<b>0</b>	760	---
Filter Age	hrs	Client Info		<b>0</b>	760	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>NORMAL</b>	ATTENTION	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>4</b>	12	---
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>3</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>15	<b>1</b>	4	---
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	7	---
Copper	ppm	ASTM D5185m	>125	<b>16</b>	135	---
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	1	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

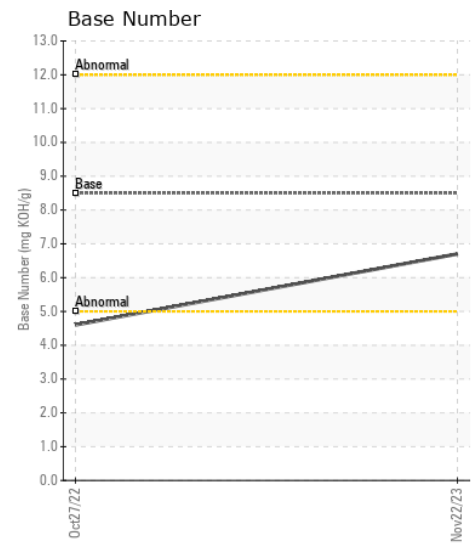
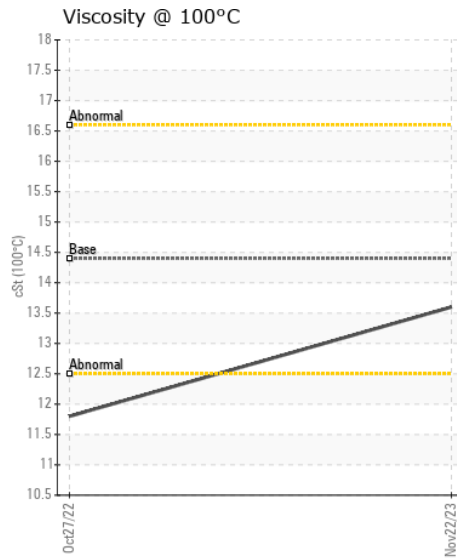
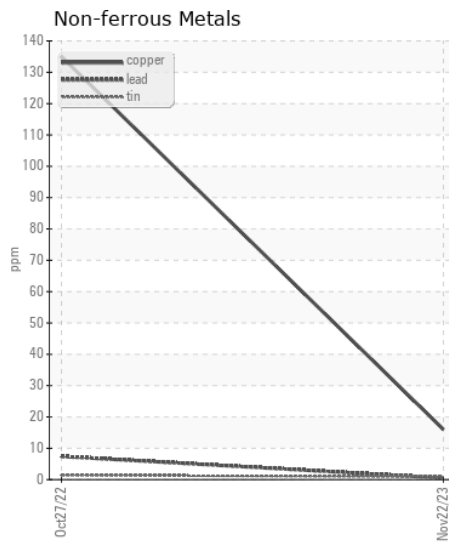
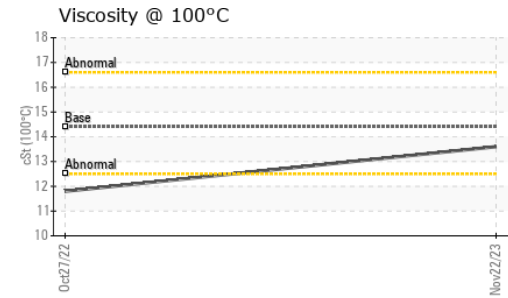
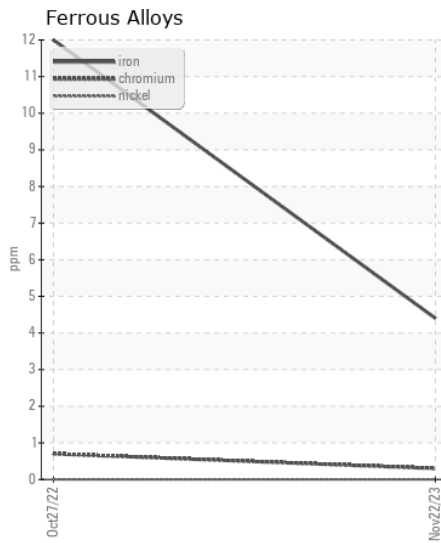
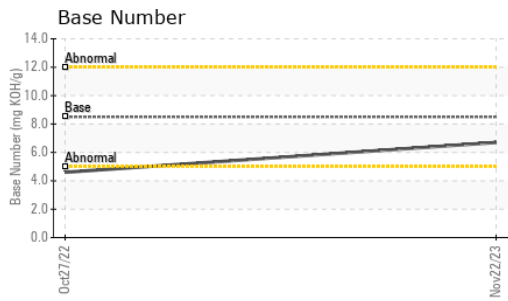
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>9</b>	10	---
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	10	---
Fuel		WC Method	>5	<b>&lt;1.0</b>	1.8	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.5</b>	12.8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.7</b>	44.0	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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	>44	<b>3</b>	1	---
Boron	ppm	ASTM D5185m	250	<b>78</b>	86	---
Barium	ppm	ASTM D5185m	10	<b>2</b>	24	---
Molybdenum	ppm	ASTM D5185m	100	<b>5</b>	44	---
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	2	---
Magnesium	ppm	ASTM D5185m	450	<b>724</b>	874	---
Calcium	ppm	ASTM D5185m	3000	<b>1327</b>	1337	---
Phosphorus	ppm	ASTM D5185m	1150	<b>785</b>	659	---
Zinc	ppm	ASTM D5185m	1350	<b>884</b>	802	---
Sulfur	ppm	ASTM D5185m	4250	<b>3058</b>	2596	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.3</b>	58.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.7</b>	4.6	---
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.6</b>	▲ 11.8	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0267647 **Received** : 12 Jan 2024  
**Lab Number** : 06060054 **Diagnosed** : 16 Jan 2024  
**Unique Number** : 10831436 **Diagnostician** : Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**MIDDLE RIVER MARINE**  
 1771 SOUTH TORRENCE AVE  
 CHICAGO, IL  
 US 60617  
 Contact: Scott Molitor  
 scottmolitor@gomidriver.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)

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F: