



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR L586 065499-1761**

Component  
**Hydraulic System**

Fluid  
**LIEBHERR HYDRAULIC HVI (--- GAL)**

### RECOMMENDATION

The filtration at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0229218</b>	LH0217434	---
Sample Date		Client Info		<b>24 Mar 2023</b>	10 Mar 2022	---
Machine Age	hrs	Client Info		<b>3987</b>	1032	---
Oil Age	hrs	Client Info		<b>3987</b>	1032	---
Filter Age	hrs	Client Info		<b>0</b>	1032	---
Oil Changed		Client Info		<b>Filtered</b>	Filtered	---
Filter Changed		Client Info		<b>N/A</b>	Changed	---
Sample Status				<b>NORMAL</b>	NORMAL	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>55	<b>14</b>	8	---
Chromium	ppm	ASTM D5185m	>5	<b>2</b>	<1	---
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m		<b>0</b>	<1	---
Aluminum	ppm	ASTM D5185m	>5	<b>4</b>	1	---
Lead	ppm	ASTM D5185m	>15	<b>5</b>	<1	---
Copper	ppm	ASTM D5185m	>15	<b>3</b>	2	---
Tin	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

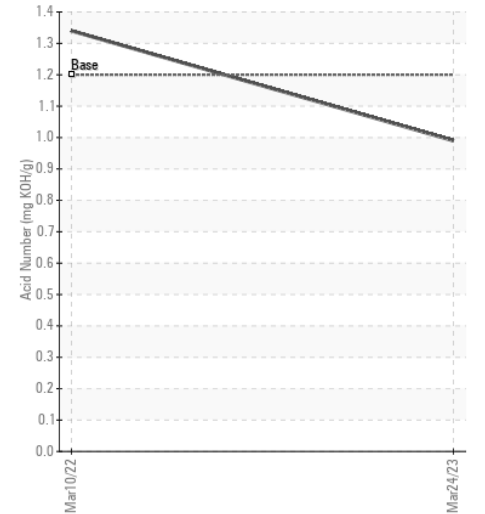
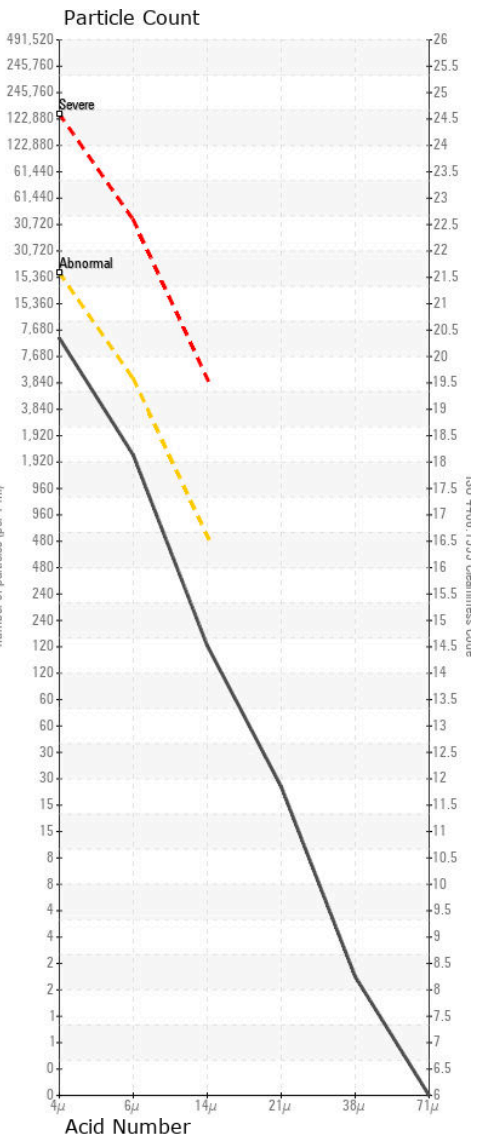
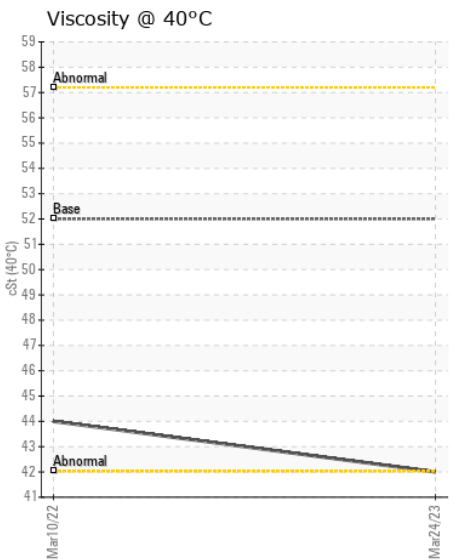
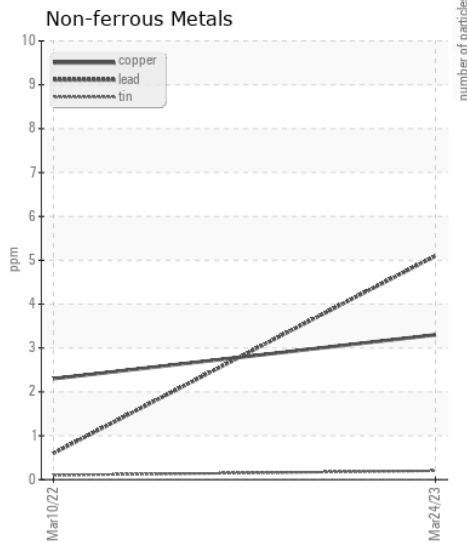
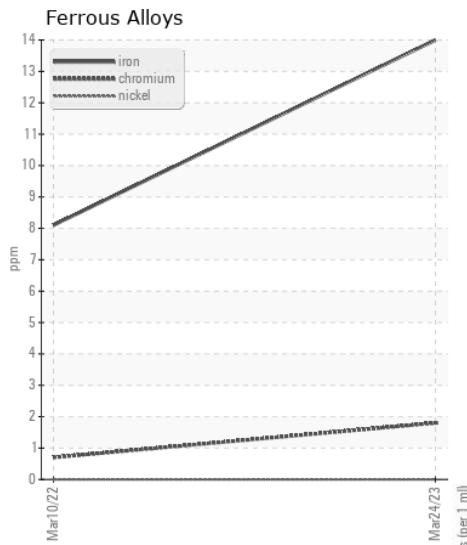
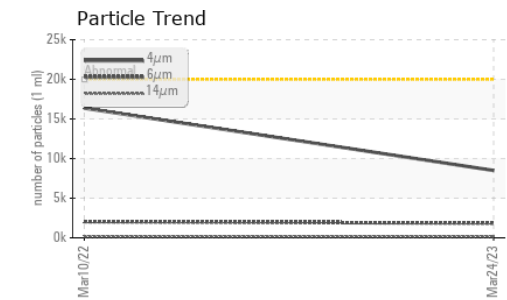
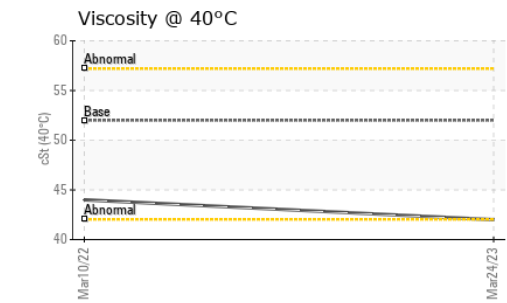
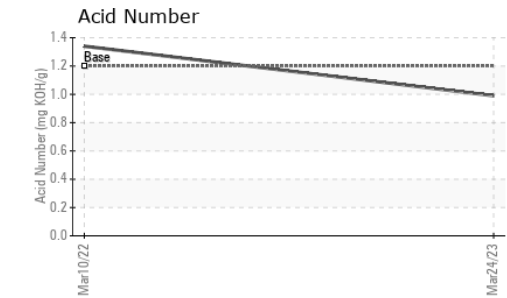
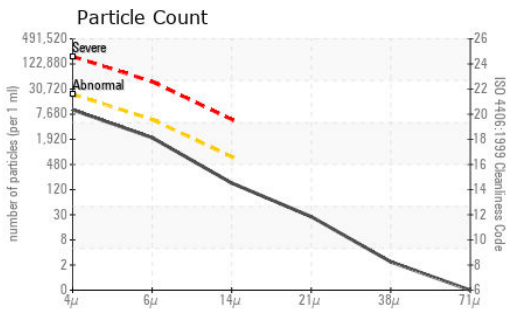
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>8</b>	4	---
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0	---
Water		WC Method	>0.1	<b>NEG</b>	NEG	---
Particles >4µm		ASTM D7647	>20000	<b>8501</b>	16363	---
Particles >6µm		ASTM D7647	>5000	<b>1841</b>	2034	---
Particles >14µm		ASTM D7647	>640	<b>152</b>	145	---
Particles >21µm		ASTM D7647	>160	<b>24</b>	43	---
Particles >38µm		ASTM D7647	>40	<b>2</b>	2	---
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>20/18/14</b>	21/18/14	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	VLITE	---
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	>0.1	<b>NEG</b>	NEG	---

### FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>3</b>	2	---
Boron	ppm	ASTM D5185m		<b>&lt;1</b>	3	---
Barium	ppm	ASTM D5185m		<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Magnesium	ppm	ASTM D5185m	7	<b>11</b>	4	---
Calcium	ppm	ASTM D5185m	1500	<b>1644</b>	1404	---
Phosphorus	ppm	ASTM D5185m	750	<b>629</b>	602	---
Zinc	ppm	ASTM D5185m	820	<b>781</b>	643	---
Sulfur	ppm	ASTM D5185m	4000	<b>6072</b>	4316	---
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	<b>0.99</b>	1.34	---
Visc @ 40°C	cSt	ASTM D445	52	<b>42.0</b>	44.0	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0229218 **Received** : 27 Mar 2023  
**Lab Number** : 05803272 **Diagnosed** : 29 Mar 2023  
**Unique Number** : 10400801 **Diagnostician** : Doug Bogart  
**Test Package** : CONST

**JR VINAGRO**  
 2208 PLAINFIELD PIKE  
 JOHNSTON, RI  
 US 02919  
 Contact: Service Manager

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: