



LIEBHERR

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH60M 117281-1217
Component
Swing Drive
Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0273567	LH0254358	---
Sample Date		Client Info		10 May 2024	03 Mar 2023	---
Machine Age	hrs	Client Info		9824	7467	---
Oil Age	hrs	Client Info		0	1000	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Not Changed	Changed	---
Filter Changed		Client Info		Not Changed	Changed	---
Sample Status				SEVERE	SEVERE	---

WEAR

Gear wear is indicated. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>350	▲ 4478	▲ 2304	---
Chromium	ppm	ASTM D5185m	>15	▲ 46	▲ 26	---
Nickel	ppm	ASTM D5185m	>5	▲ 10	4	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m		<1	<1	---
Aluminum	ppm	ASTM D5185m	>5	1	4	---
Lead	ppm	ASTM D5185m	>10	0	0	---
Copper	ppm	ASTM D5185m	>300	▲ 1481	▲ 742	---
Tin	ppm	ASTM D5185m	>15	▲ 45	▲ 15	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	MODER	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

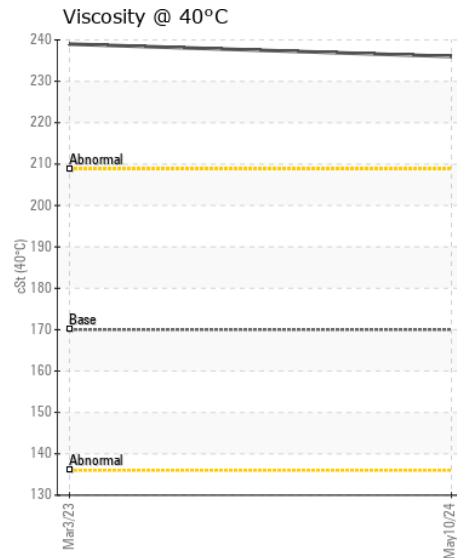
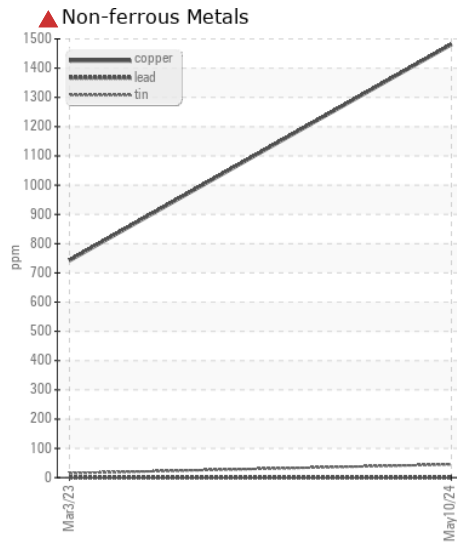
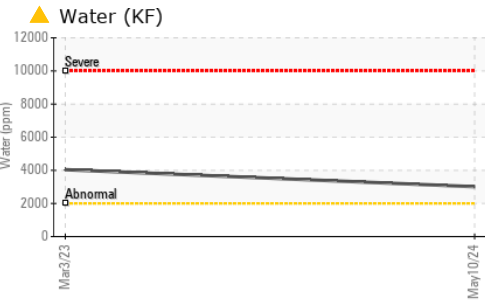
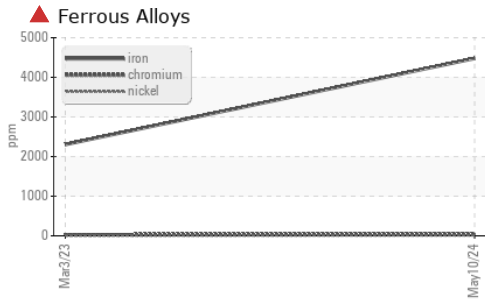
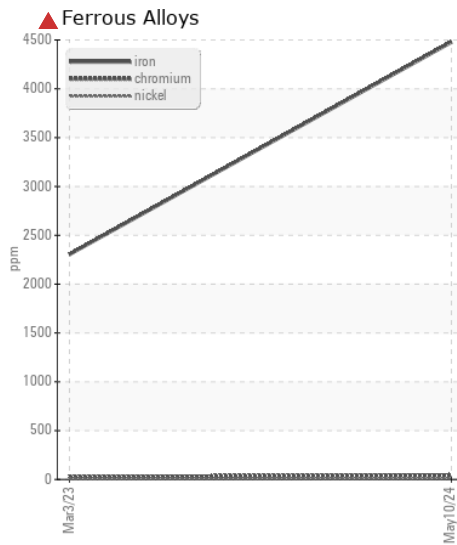
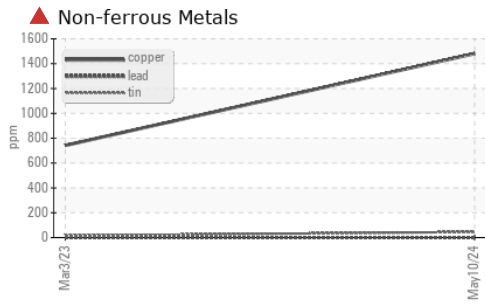
There is a moderate concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>15	12	6	---
Potassium	ppm	ASTM D5185m	>20	3	0	---
Water	%	ASTM D6304	>0.2	▲ 0.301	▲ 0.404	---
ppm Water	ppm	ASTM D6304	>2000	▲ 3010	▲ 4040	---
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	▲ 0.2%	▲ 0.2%	---

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185m		3	2	---
Boron	ppm	ASTM D5185m	0	2	0	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	0	2	1	---
Manganese	ppm	ASTM D5185m	0	35	20	---
Magnesium	ppm	ASTM D5185m	<1	5	2	---
Calcium	ppm	ASTM D5185m	<1	32	20	---
Phosphorus	ppm	ASTM D5185m	2143	2576	2334	---
Zinc	ppm	ASTM D5185m	<1	53	24	---
Sulfur	ppm	ASTM D5185m	23468	39750	41681	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0273567 **Received** : 17 Jun 2024
Lab Number : 06212683 **Tested** : 19 Jun 2024
Unique Number : 11085547 **Diagnosed** : 19 Jun 2024 - Angela Borella
Test Package : CONST (Additional Tests: KF)

SIMS METAL MANAGEMENT
 3220 DEEPWATER TERMINAL RD
 RICHMOND, VA
 US 23234
 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)

T: (703)392-0111

F: