



LIEBHERR

OIL ANALYSIS REPORT



Area

(341435)

Machine Id

LIEBHERR LH50M 128733-1216

Component

Front Right Wheel Hub

Fluid

GEAR OIL SAE 80W90 (--- GAL)

WEAR
CONTAMINATION
FLUID CONDITION

ABNORMAL

NORMAL

NORMAL

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0289404	LH0286554	LH0277778
Sample Date		Client Info		17 Jun 2024	19 Mar 2024	20 Nov 2023
Machine Age	hrs	Client Info		10161	9241	8180
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		None	None	None
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

A sharp increase in the copper level is noted. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185(m)	>325	46	<1	6
Chromium	ppm	ASTM D5185(m)	>3	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>10	2	0	<1
Lead	ppm	ASTM D5185(m)	>4	2	0	<1
Copper	ppm	ASTM D5185(m)	>75	▲ 82	2	5
Tin	ppm	ASTM D5185(m)	>3	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

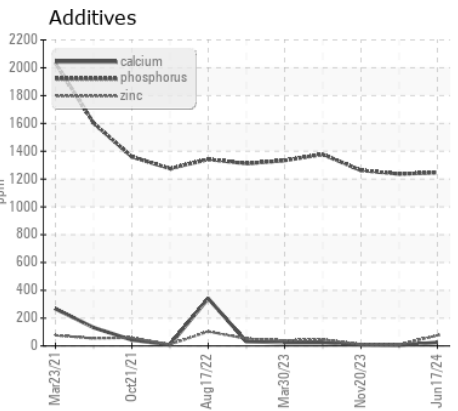
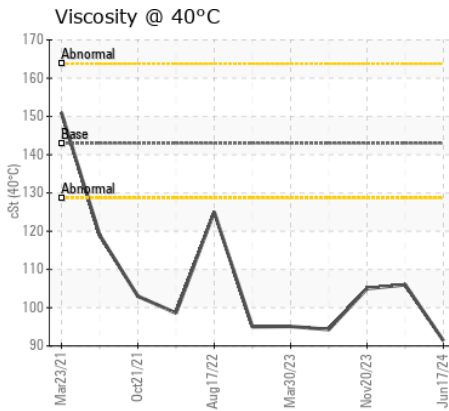
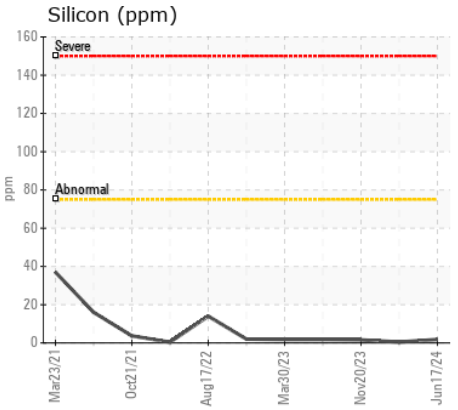
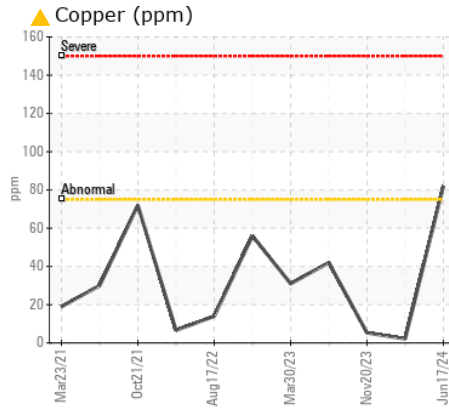
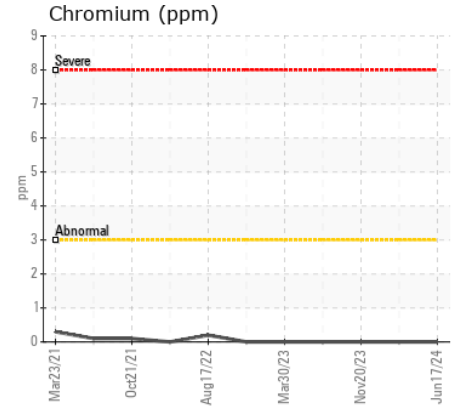
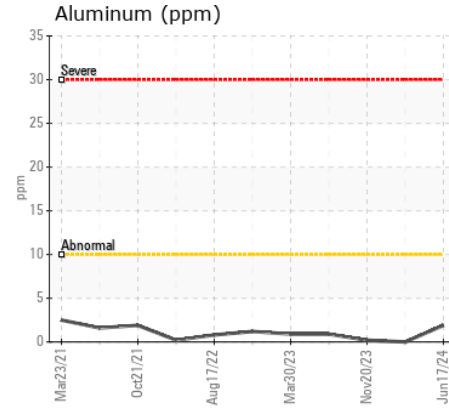
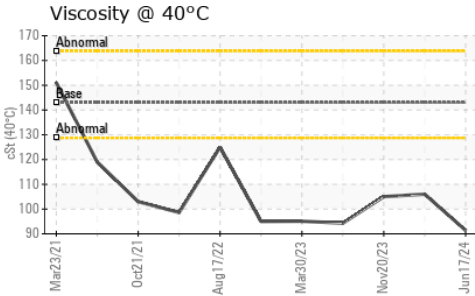
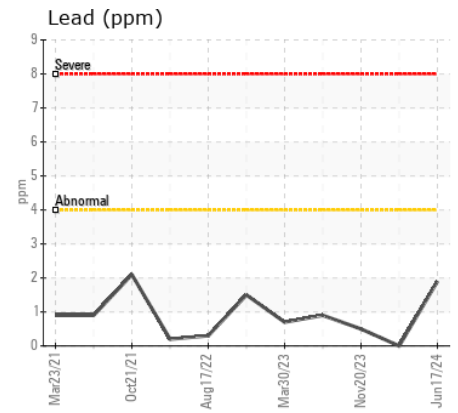
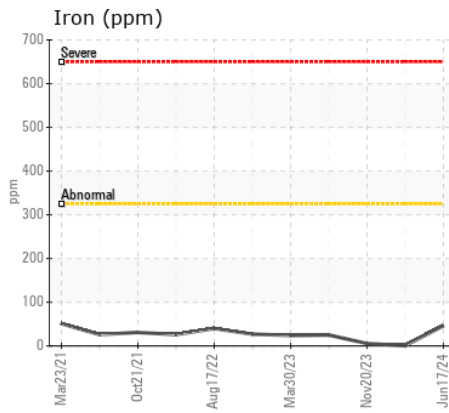
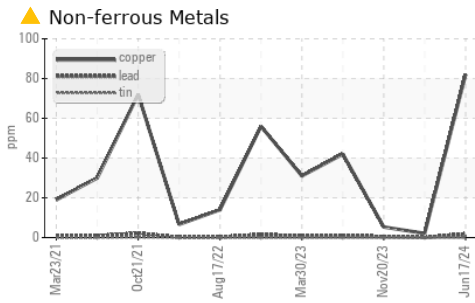
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>75	2	<1	2
Potassium	ppm	ASTM D5185(m)	>20	<1	0	0
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
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*	>0.2	NEG	NEG	NEG

FLUID CONDITION

Viscosity of sample indicates oil is within SAE 75W90 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)	>170	4	<1	1
Boron	ppm	ASTM D5185(m)	400	291	308	315
Barium	ppm	ASTM D5185(m)	200	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	12	0	0	0
Manganese	ppm	ASTM D5185(m)		3	0	0
Magnesium	ppm	ASTM D5185(m)	12	2	2	1
Calcium	ppm	ASTM D5185(m)	150	25	6	9
Phosphorus	ppm	ASTM D5185(m)	1650	1246	1236	1262
Zinc	ppm	ASTM D5185(m)	125	76	8	11
Sulfur	ppm	ASTM D5185(m)	22500	20988	21017	21510
Visc @ 40°C	cSt	ASTM D7279(m)	143	91.4	106	105



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289404
Lab Number : 02642650
Unique Number : 5800189
Test Package : MOB 1
Received : 18 Jun 2024
Tested : 18 Jun 2024
Diagnosed : 19 Jun 2024 - Kevin Marson

COMBINED METAL INDUSTRIES
 454 DOBBIE DRIVE
 CAMBRIDGE, ON
 CA N1T 1S7
 Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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F: