



LIEBHERR

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ABNORMAL

NORMAL

NORMAL



Machine Id
LIEBHERR L586 068511-1761
Component
Front Differential
Fluid
GEAR OIL SAE 80W90 (--- GAL)

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		LH0291011	LH0261349	LH0256857
Sample Date		Client Info		10 Jun 2024	24 May 2023	04 Apr 2023
Machine Age	hrs	Client Info		3246	1041	700
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		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Tin ppm levels are abnormal. An increase in the copper level is noted. Thrust washer and/or bearing/bushing wear is indicated.

Iron	ppm	ASTM D5185(m)	>1500	286	81	219
Chromium	ppm	ASTM D5185(m)	>10	2	<1	2
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	2
Titanium	ppm	ASTM D5185(m)	>5	0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	<1	3
Lead	ppm	ASTM D5185(m)	>5	4	1	3
Copper	ppm	ASTM D5185(m)	>200	176	51	114
Tin	ppm	ASTM D5185(m)	>10	▲ 17	3	8
Vanadium	ppm	ASTM D5185(m)		0	0	<1
White Metal	scalar	Visual*	NONE	VLITE	LIGHT	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

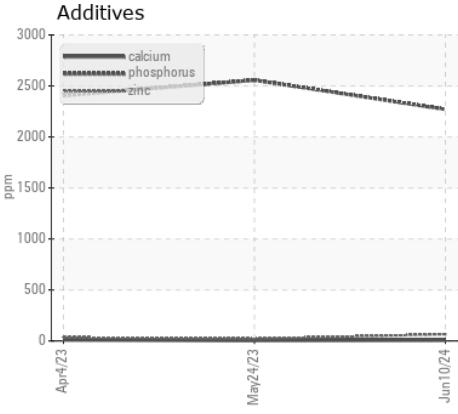
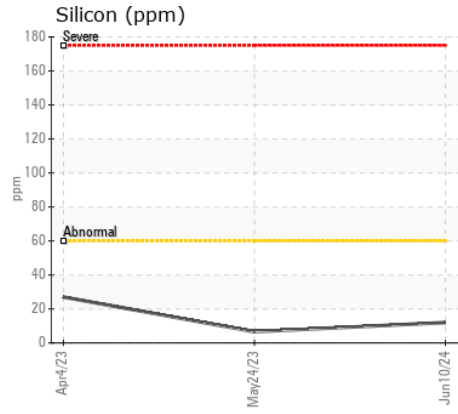
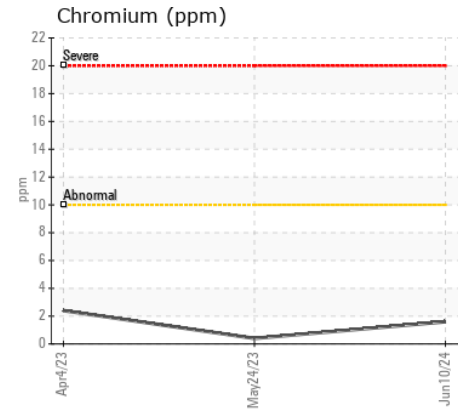
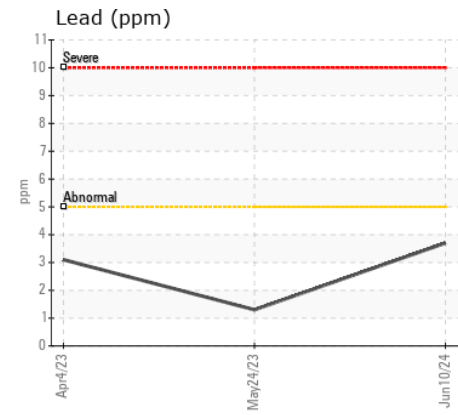
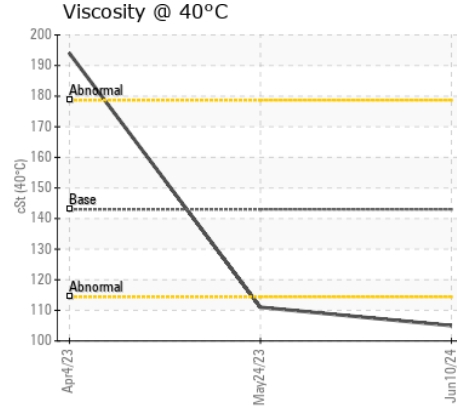
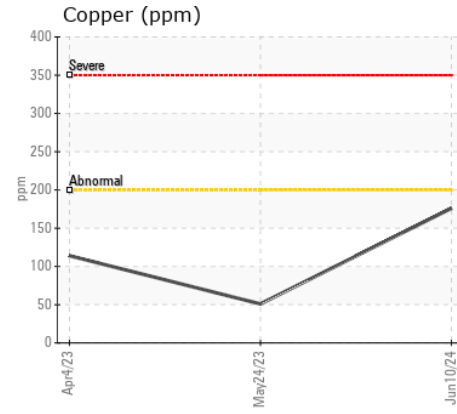
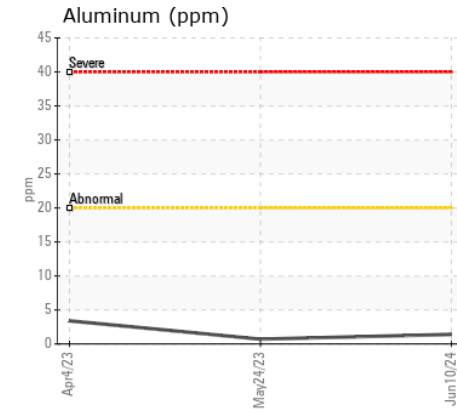
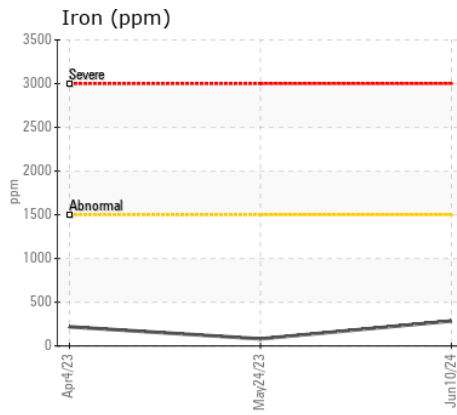
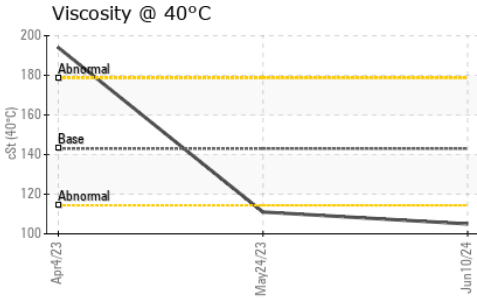
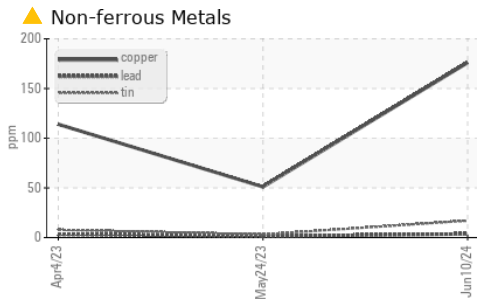
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	12	7	27
Potassium	ppm	ASTM D5185(m)	>20	1	<1	0
Water		WC Method	>.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>.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	5	3	9
Boron	ppm	ASTM D5185(m)	400	208	232	3
Barium	ppm	ASTM D5185(m)	200	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	12	0	0	<1
Manganese	ppm	ASTM D5185(m)		18	12	61
Magnesium	ppm	ASTM D5185(m)	12	2	2	4
Calcium	ppm	ASTM D5185(m)	150	8	6	13
Phosphorus	ppm	ASTM D5185(m)	1650	2270	2557	2406
Zinc	ppm	ASTM D5185(m)	125	65	20	34
Sulfur	ppm	ASTM D5185(m)	22500	20724	21737	27484
Visc @ 40°C	cSt	ASTM D7279(m)	143	105	111	194



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0291011 **Received** : 11 Jun 2024
Lab Number : 02641230 **Tested** : 11 Jun 2024
Unique Number : 5798769 **Diagnosed** : 12 Jun 2024 - Kevin Marson
Test Package : MOB 1

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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