



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH22M 137772-1525
Component
Front Left Wheel Hub
Fluid
SAE 75W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0232640	---	---
Sample Date		Client Info		27 May 2024	---	---
Machine Age	hrs	Client Info		3213	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		None	---	---
Sample Status				ABNORMAL	---	---

WEAR

Copper ppm levels are abnormal. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185(m)	>650	79	---	---
Chromium	ppm	ASTM D5185(m)	>4	<1	---	---
Nickel	ppm	ASTM D5185(m)	>4	0	---	---
Titanium	ppm	ASTM D5185(m)	>4	0	---	---
Silver	ppm	ASTM D5185(m)		0	---	---
Aluminum	ppm	ASTM D5185(m)	>25	<1	---	---
Lead	ppm	ASTM D5185(m)	>4	1	---	---
Copper	ppm	ASTM D5185(m)	>60	▲ 64	---	---
Tin	ppm	ASTM D5185(m)	>4	0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
White Metal	scalar	Visual*	NONE	VLITE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

There is no indication of any contamination in the oil.

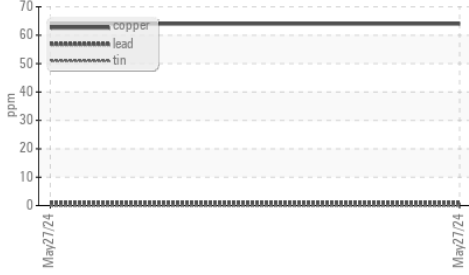
Silicon	ppm	ASTM D5185(m)	>75	6	---	---
Potassium	ppm	ASTM D5185(m)	>20	<1	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	NEG	---	---

FLUID CONDITION

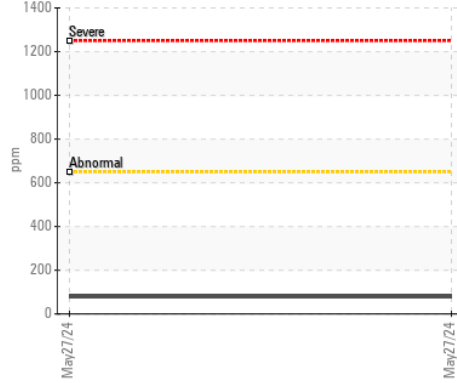
Viscosity of sample indicates oil is within SAE 20 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		16	---	---
Boron	ppm	ASTM D5185(m)	150	97	---	---
Barium	ppm	ASTM D5185(m)	5	4	---	---
Molybdenum	ppm	ASTM D5185(m)	0	0	---	---
Manganese	ppm	ASTM D5185(m)		2	---	---
Magnesium	ppm	ASTM D5185(m)	0	9	---	---
Calcium	ppm	ASTM D5185(m)	20	3175	---	---
Phosphorus	ppm	ASTM D5185(m)	1200	1107	---	---
Zinc	ppm	ASTM D5185(m)	25	1294	---	---
Sulfur	ppm	ASTM D5185(m)	22000	2842	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	99.5	61.1	---	---

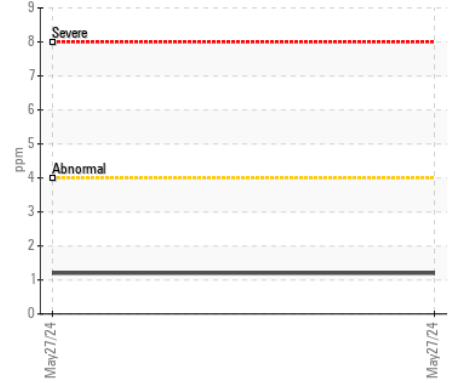
▲ Non-ferrous Metals



Iron (ppm)



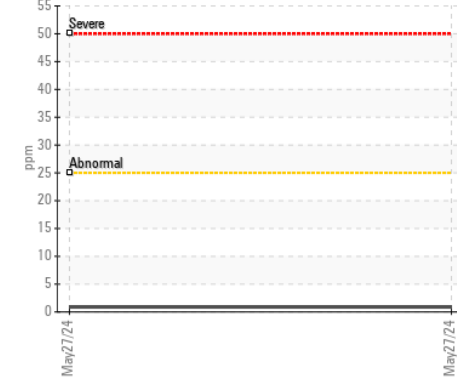
Lead (ppm)



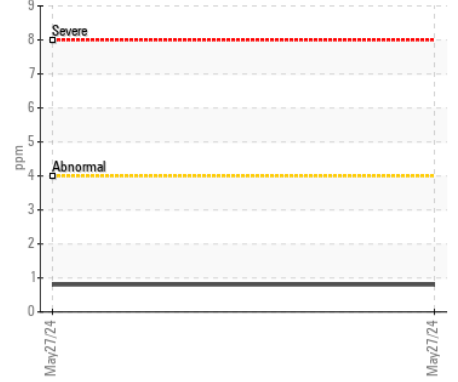
Viscosity @ 40°C



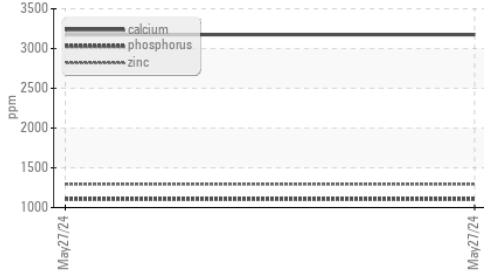
Aluminum (ppm)



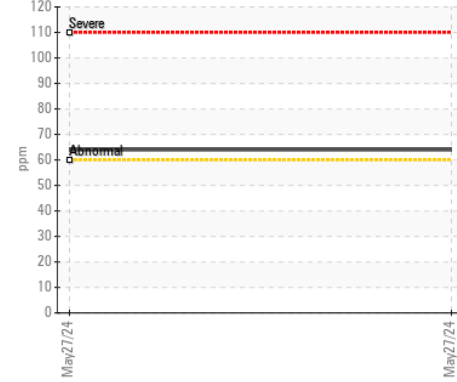
Chromium (ppm)



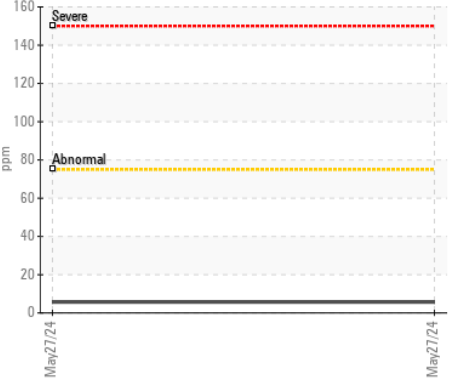
Additives



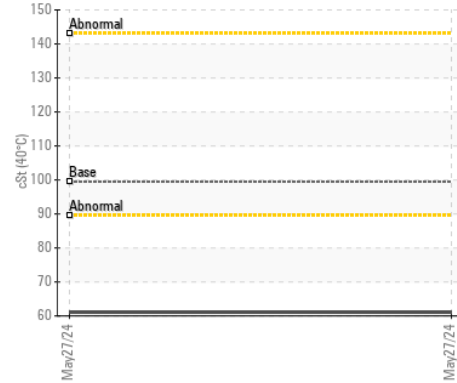
▲ Copper (ppm)



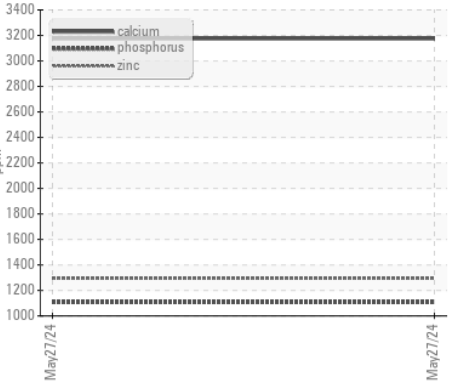
Silicon (ppm)



Viscosity @ 40°C



Additives



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : LH0232640

Lab Number : 02639455

Unique Number : 5788617

Test Package : MOBCE

Received : 03 Jun 2024

Tested : 03 Jun 2024

Diagnosed : 03 Jun 2024 - Kevin Marson

Excavation Dolbeau Inc.

493 - 2ieme Avenue

Dolbeau-Mistassini, QC

CA G8L 1V3

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.

T:

F: