



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH110 1227-155752
Component
Front Right Wheel Hub
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0280577	LH0280566	---
Sample Date		Client Info		20 Feb 2024	11 Jan 2024	---
Machine Age	hrs	Client Info		1022	507	---
Oil Age	hrs	Client Info		0	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Not Changd	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>650	46	32	---
Chromium	ppm	ASTM D5185m	>4	0	0	---
Nickel	ppm	ASTM D5185m	>4	0	<1	---
Titanium	ppm	ASTM D5185m	>4	0	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>25	<1	<1	---
Lead	ppm	ASTM D5185m	>4	0	0	---
Copper	ppm	ASTM D5185m	>60	0	0	---
Tin	ppm	ASTM D5185m	>4	0	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

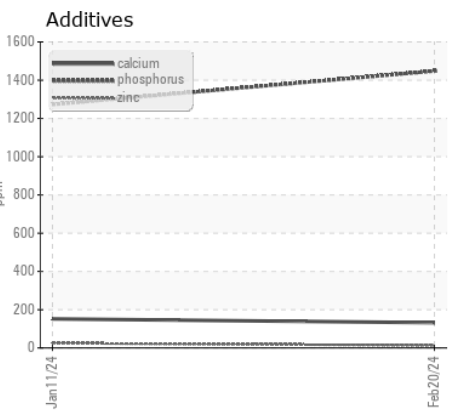
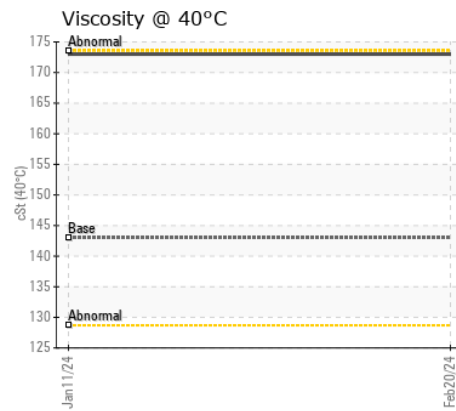
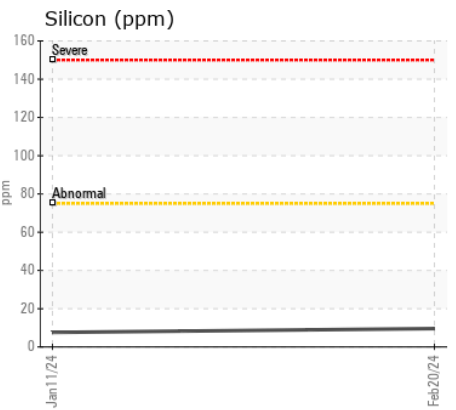
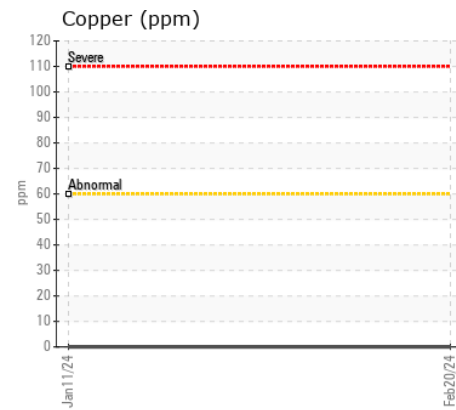
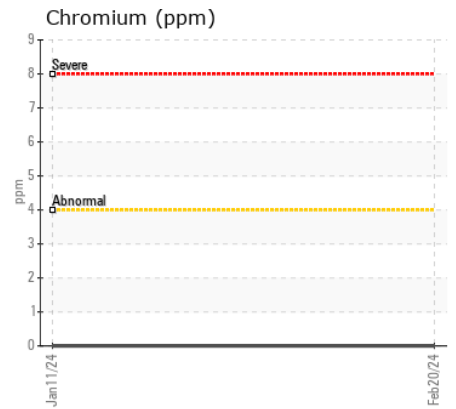
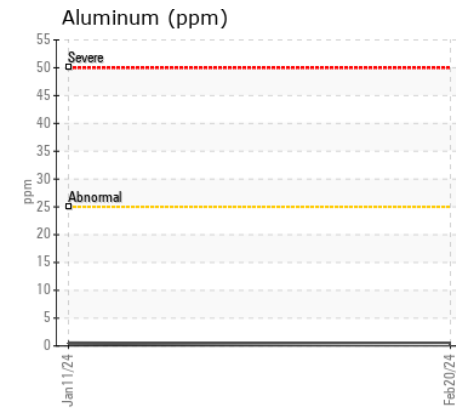
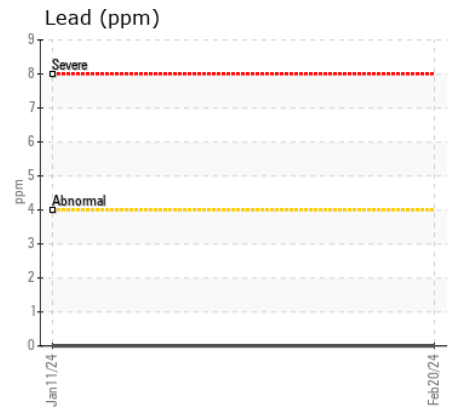
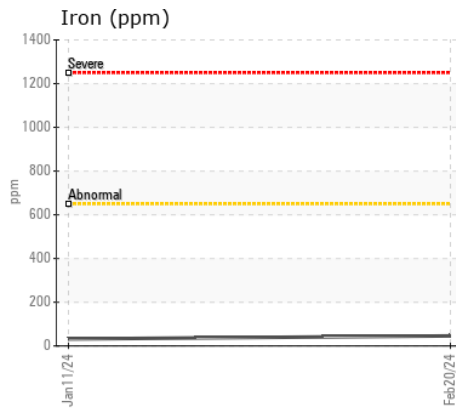
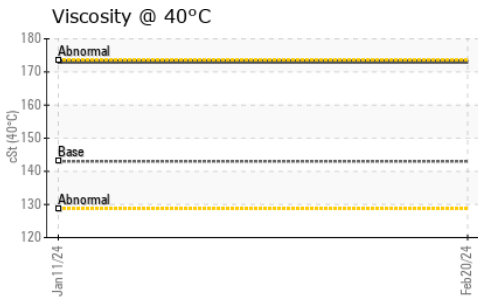
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>75	10	8	---
Potassium	ppm	ASTM D5185m	>20	0	2	---
Water		WC Method	>0.2	NEG	NEG	---
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	NEG	NEG	---

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>170	3	4	---
Boron	ppm	ASTM D5185m	400	4	5	---
Barium	ppm	ASTM D5185m	200	0	<1	---
Molybdenum	ppm	ASTM D5185m	12	0	0	---
Manganese	ppm	ASTM D5185m		1	1	---
Magnesium	ppm	ASTM D5185m	12	0	3	---
Calcium	ppm	ASTM D5185m	150	132	152	---
Phosphorus	ppm	ASTM D5185m	1650	1448	1273	---
Zinc	ppm	ASTM D5185m	125	13	25	---
Sulfur	ppm	ASTM D5185m	22500	18560	16443	---
Visc @ 40°C	cSt	ASTM D445	143	173	173	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : LH0280577

Lab Number : 06100515

Unique Number : 10898745

Test Package : MOBCE

Received : 26 Feb 2024

Tested : 27 Feb 2024

Diagnosed : 27 Feb 2024 - Wes Davis

KINDER MORGAN

4301 IVERSON

TRINITY, AL

US 35601

Contact: CHIP OAKES

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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