



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MS18
Component
Front Right Wheel Hub
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LHMC100133	LHMC131467	LHMC119691
Sample Date		Client Info		01 Dec 2023	03 Aug 2023	13 May 2023
Machine Age	hrs	Client Info		5393	4388	3734
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>500	74	42	112
Chromium	ppm	ASTM D5185m	>8	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	<1	1	0
Lead	ppm	ASTM D5185m	>5	<1	0	0
Copper	ppm	ASTM D5185m	>50	7	6	8
Tin	ppm	ASTM D5185m		<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

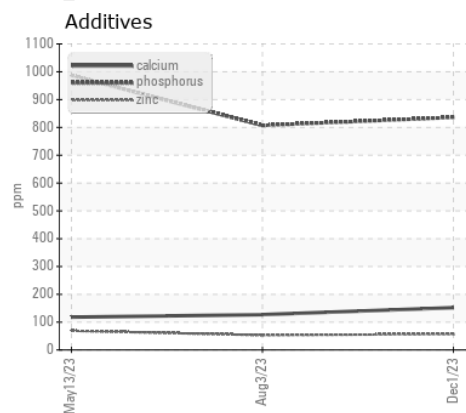
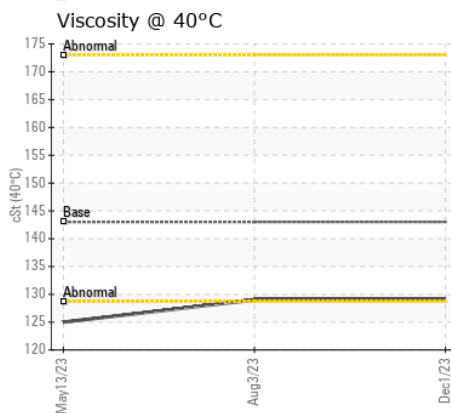
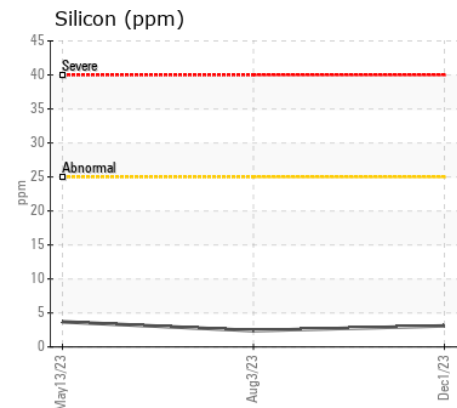
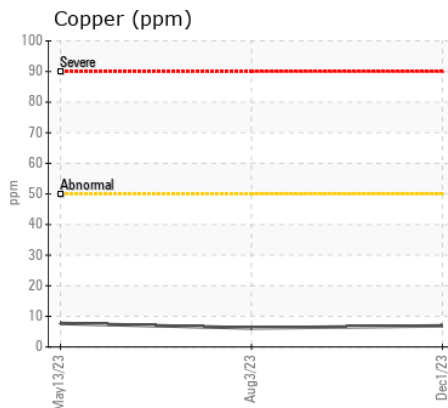
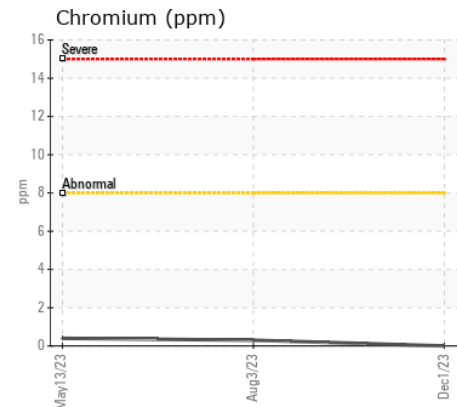
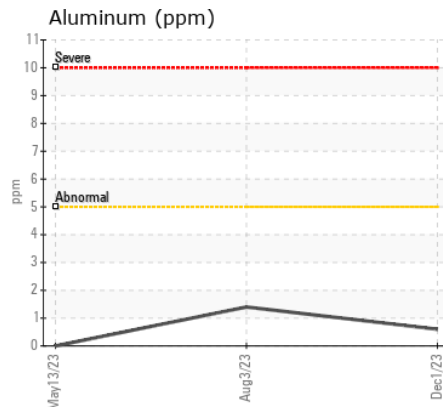
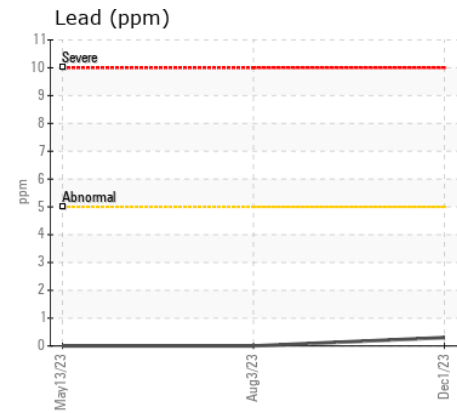
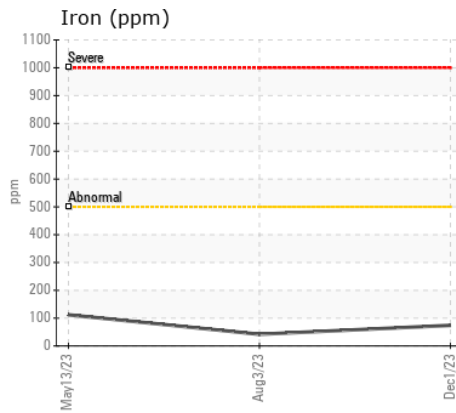
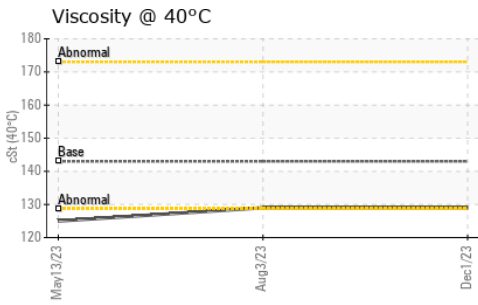
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	2	4
Potassium	ppm	ASTM D5185m	>20	<1	2	<1
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	LIGHT	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
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

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

Sodium	ppm	ASTM D5185m	>170	5	6	4
Boron	ppm	ASTM D5185m	400	152	166	251
Barium	ppm	ASTM D5185m	200	0	0	0
Molybdenum	ppm	ASTM D5185m	12	0	0	<1
Manganese	ppm	ASTM D5185m		1	1	1
Magnesium	ppm	ASTM D5185m	12	13	4	1
Calcium	ppm	ASTM D5185m	150	152	127	118
Phosphorus	ppm	ASTM D5185m	1650	836	807	987
Zinc	ppm	ASTM D5185m	125	57	53	69
Sulfur	ppm	ASTM D5185m	22500	21039	24531	20345
Visc @ 40°C	cSt	ASTM D445	143	129	129	125



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LHMC100133
Lab Number : 06089730
Unique Number : 10877175
Test Package : MOB 1

Received : 14 Feb 2024
Tested : 16 Feb 2024
Diagnosed : 16 Feb 2024 - Wes Davis

OSCAR WINSKI CO. INC
 2407 N. 9TH STREET
 LAFAYETTE, IN
 US 47904

Contact: PATRICK CHRISTOPHER
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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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