



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**123312-1216**  
Component  
**Front Left 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		<b>LH0289604</b>	LH0270489	LH0242278
Sample Date		Client Info		<b>16 Apr 2024</b>	23 Jul 2023	14 Oct 2022
Machine Age	hrs	Client Info		<b>4318</b>	3278	2145
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	Changed	Changed
Filter Changed		Client Info		<b>None</b>	None	None
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

An increase in the copper level is noted. All other component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>325	<b>10</b>	28	35
Chromium	ppm	ASTM D5185(m)	>3	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>3</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>&lt;1</b>	<1	1
Lead	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>75	<b>47</b>	15	21
Tin	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	VLITE	LIGHT
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

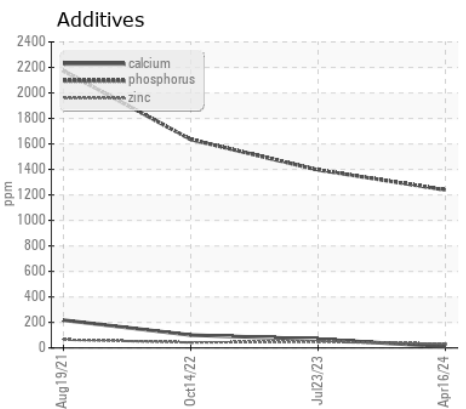
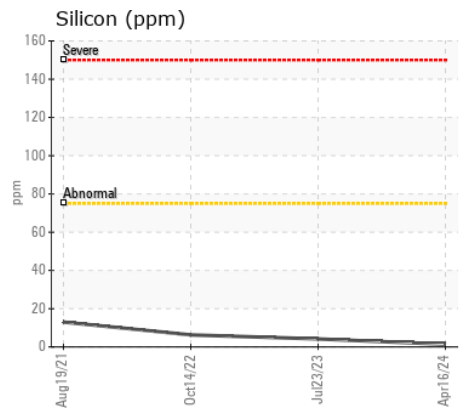
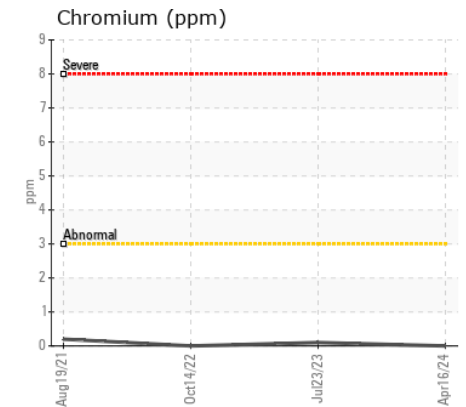
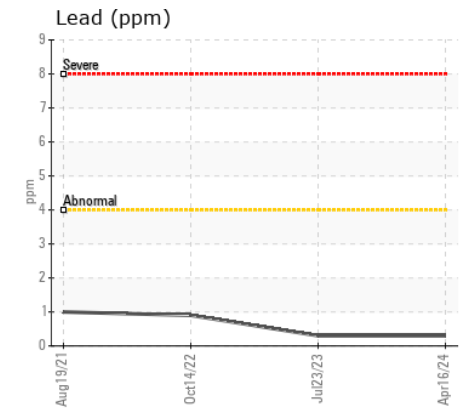
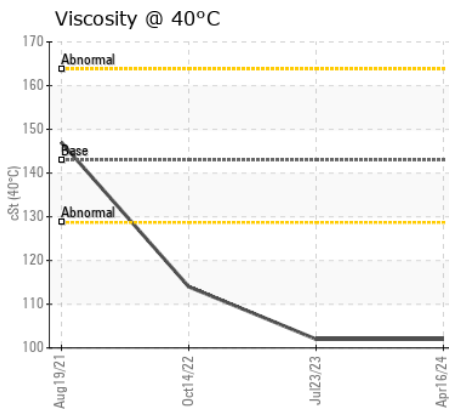
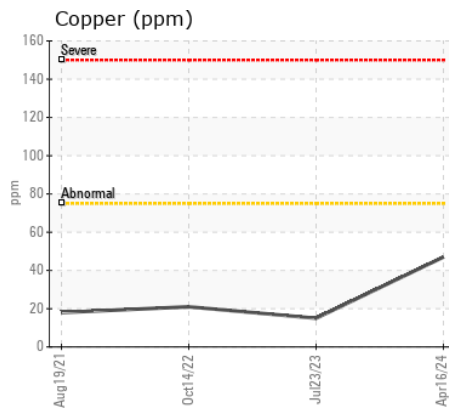
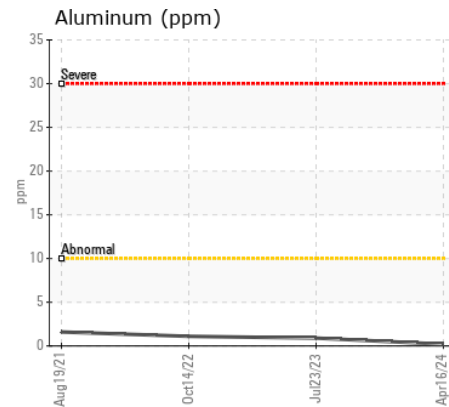
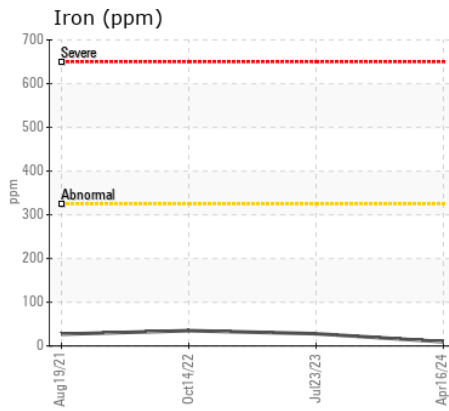
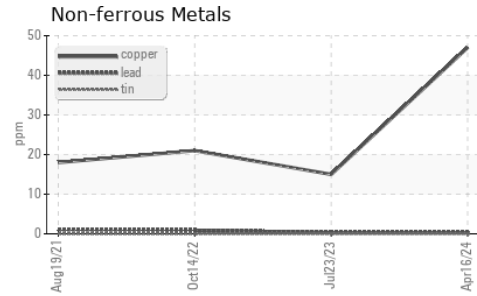
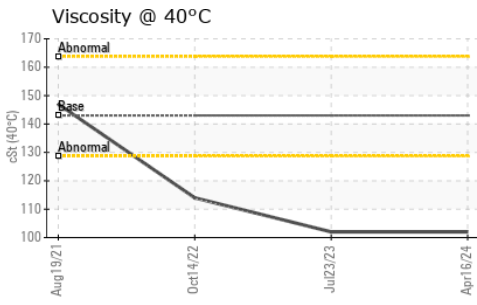
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>75	<b>1</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	<1	1
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

Viscosity of sample indicates oil is within SAE 75W90 range, advise investigate. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>170	<b>1</b>	7	9
Boron	ppm	ASTM D5185(m)	400	<b>326</b>	230	169
Barium	ppm	ASTM D5185(m)	200	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	12	<b>0</b>	<1	<1
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	1	2
Magnesium	ppm	ASTM D5185(m)	12	<b>1</b>	2	2
Calcium	ppm	ASTM D5185(m)	150	<b>10</b>	69	101
Phosphorus	ppm	ASTM D5185(m)	1650	<b>1239</b>	1396	1635
Zinc	ppm	ASTM D5185(m)	125	<b>32</b>	48	43
Sulfur	ppm	ASTM D5185(m)	22500	<b>20891</b>	20669	22258
Visc @ 40°C	cSt	ASTM D7279(m)	143	<b>102</b>	102	114



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0289604  
**Lab Number** : 02629754  
**Unique Number** : 5762886  
**Test Package** : MOB 1  
**Received** : 17 Apr 2024  
**Tested** : 17 Apr 2024  
**Diagnosed** : 17 Apr 2024 - Kevin Marson

**American Iron and Metal**  
 3518 DAVIS DRIVE  
 EAST GWILLIMBURY, ON  
 CA L0G 1E0  
 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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