



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR  
CONTAMINATION  
FLUID CONDITION

**SEVERE**

**NORMAL**

**NORMAL**



Machine Id  
**LIEBHERR L566 054116-1484**  
Component  
**Front Right Wheel Hub**  
Fluid  
**LIEBHERR GEAR BASIC 90 LS (--- 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		<b>LH0281156</b>	---	---
Sample Date		Client Info		<b>04 Jan 2024</b>	---	---
Machine Age	hrs	Client Info		<b>9598</b>	---	---
Oil Age	hrs	Client Info		<b>0</b>	---	---
Filter Age	hrs	Client Info		<b>0</b>	---	---
Oil Changed		Client Info		<b>Changed</b>	---	---
Filter Changed		Client Info		<b>N/A</b>	---	---
Sample Status				<b>SEVERE</b>	---	---

### WEAR

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

Iron	ppm	ASTM D5185(m)	>500	<b>274</b>	---	---
Chromium	ppm	ASTM D5185(m)	>8	<b>3</b>	---	---
Nickel	ppm	ASTM D5185(m)	>5	<b>13</b>	---	---
Titanium	ppm	ASTM D5185(m)		<b>0</b>	---	---
Silver	ppm	ASTM D5185(m)		<b>0</b>	---	---
Aluminum	ppm	ASTM D5185(m)	>5	<b>2</b>	---	---
Lead	ppm	ASTM D5185(m)	>5	<b>3</b>	---	---
Copper	ppm	ASTM D5185(m)	>50	<b>94</b>	---	---
Tin	ppm	ASTM D5185(m)		<b>6</b>	---	---
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	---	---
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>VLITE</b>	---	---

### CONTAMINATION

There is no indication of any contamination in the oil.

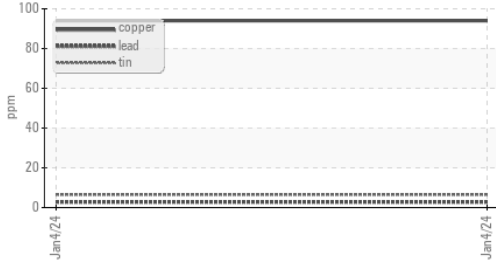
Silicon	ppm	ASTM D5185(m)	>25	<b>30</b>	---	---
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	---	---
Water		WC Method	>0.2	<b>NEG</b>	---	---
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	---	---

### FLUID CONDITION

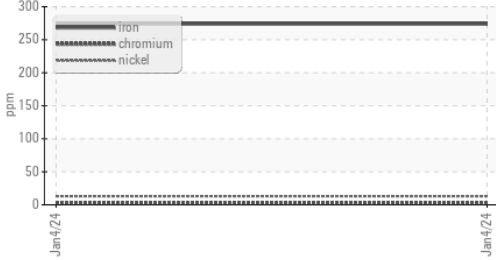
Additive levels indicate the addition of a different brand, or type of oil. Viscosity of sample indicates oil is within SAE 90 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>6</b>	---	---
Boron	ppm	ASTM D5185(m)	0	<b>2</b>	---	---
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	---	---
Manganese	ppm	ASTM D5185(m)	0	<b>43</b>	---	---
Magnesium	ppm	ASTM D5185(m)	<1	<b>4</b>	---	---
Calcium	ppm	ASTM D5185(m)	<1	<b>4</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	2143	<b>2255</b>	---	---
Zinc	ppm	ASTM D5185(m)	<1	<b>27</b>	---	---
Sulfur	ppm	ASTM D5185(m)	23468	<b>25108</b>	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	170	<b>193</b>	---	---

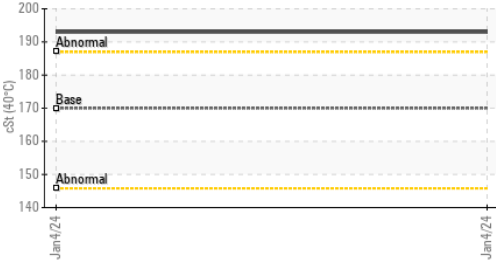
**Non-ferrous Metals**



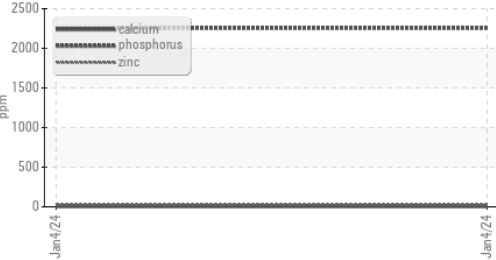
**Ferrous Alloys**



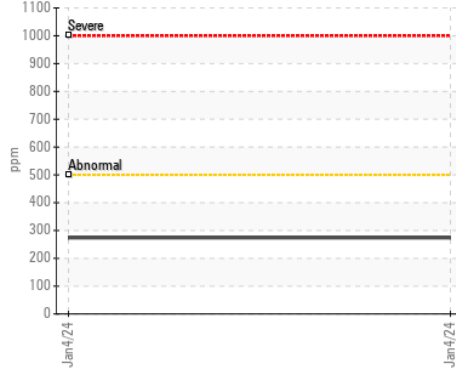
**Viscosity @ 40°C**



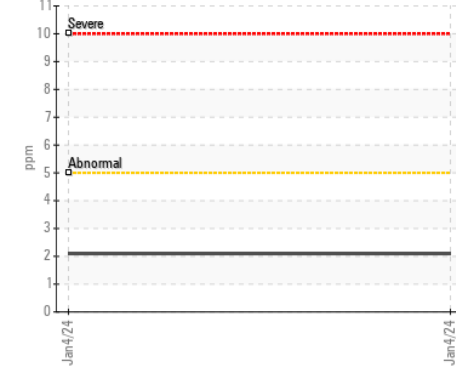
**Additives**



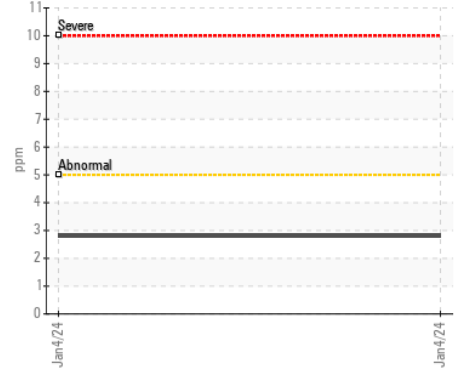
**Iron (ppm)**



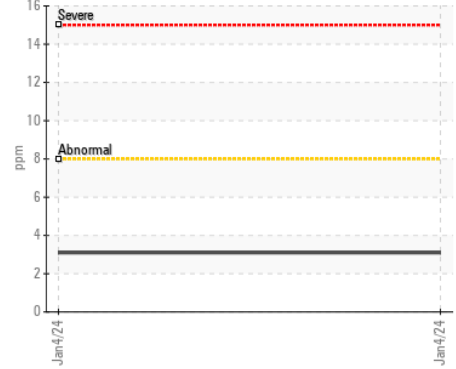
**Aluminum (ppm)**



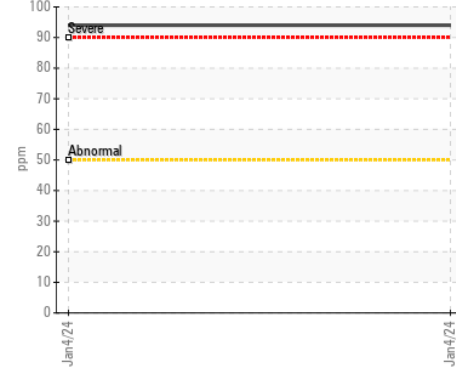
**Lead (ppm)**



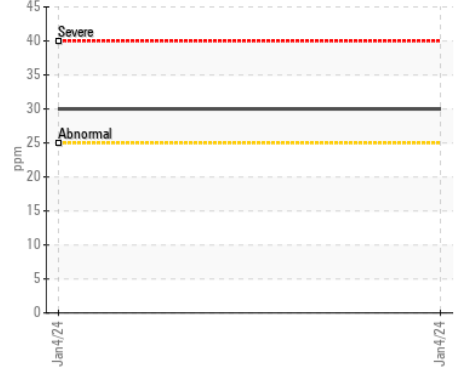
**Chromium (ppm)**



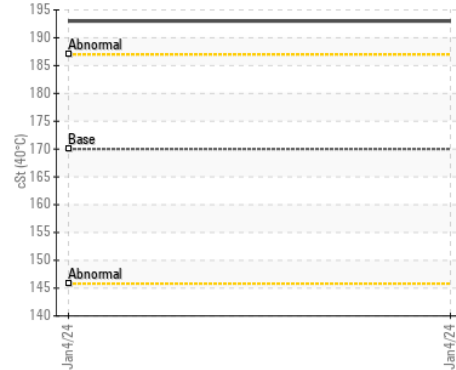
**Copper (ppm)**



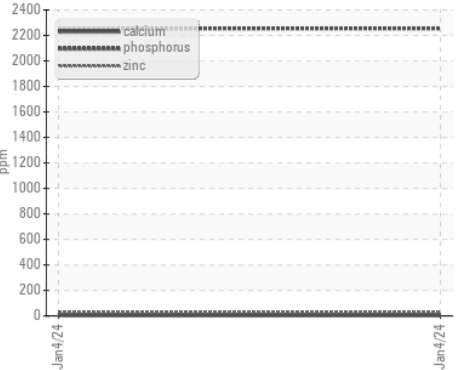
**Silicon (ppm)**



**Viscosity @ 40°C**



**Additives**



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0281156 **Received** : 10 Jan 2024  
**Lab Number** : 02607936 **Diagnosed** : 11 Jan 2024  
**Unique Number** : 5709022 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 1

**Abbycel Substrate Ltd.**  
 3545 Ross Road  
 Abbotsford, BC  
 CA V4X 1M6  
 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: