



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>ATTENTION</b>

Machine Id  
**LIEBHERR LR 1600/2 CR6604 - WI (S/N 074564)**

Component  
**Winch**

Fluid  
**GEAR OIL ISO 220 (--- GAL)**

## RECOMMENDATION

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0867408</b>	---	---
Sample Date		Client Info		<b>21 Dec 2023</b>	---	---
Machine Age	hrs	Client Info		<b>14914</b>	---	---
Oil Age	hrs	Client Info		<b>0</b>	---	---
Filter Age	hrs	Client Info		<b>0</b>	---	---
Oil Changed		Client Info		<b>N/A</b>	---	---
Filter Changed		Client Info		<b>N/A</b>	---	---
Sample Status				<b>ABNORMAL</b>	---	---

## WEAR

Gear wear is indicated.

Iron	ppm	ASTM D5185m	>150	<b>▲ 269</b>	---	---
Chromium	ppm	ASTM D5185m	>10	<b>1</b>	---	---
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185m		<b>0</b>	---	---
Silver	ppm	ASTM D5185m		<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m	>5	<b>5</b>	---	---
Lead	ppm	ASTM D5185m	>15	<b>2</b>	---	---
Copper	ppm	ASTM D5185m	>80	<b>2</b>	---	---
Tin	ppm	ASTM D5185m		<b>0</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	---	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---

## CONTAMINATION

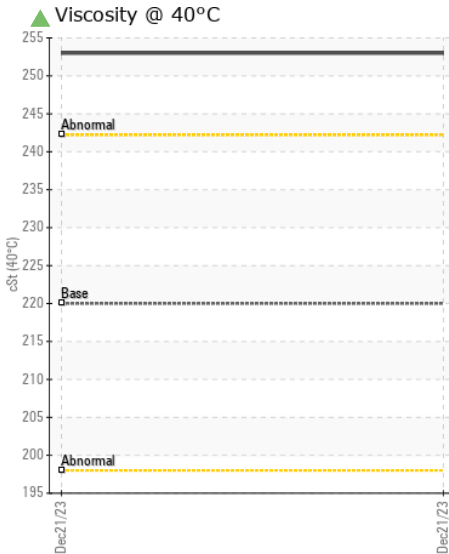
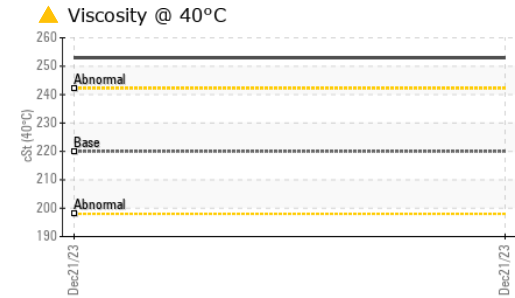
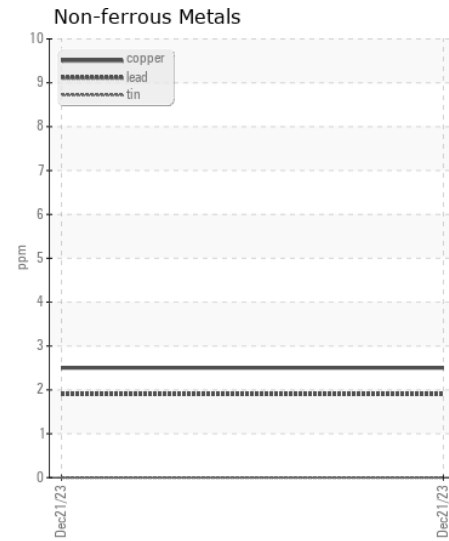
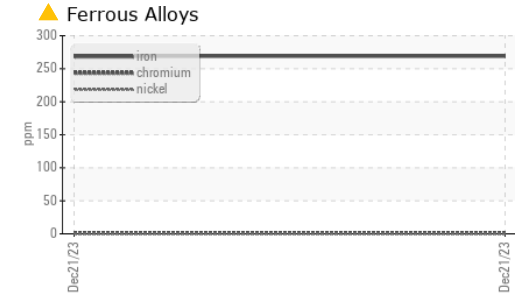
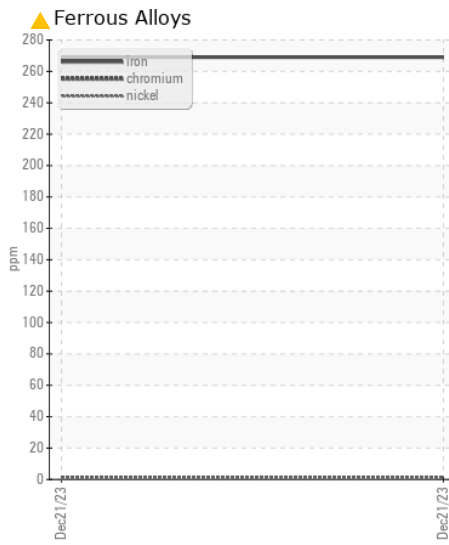
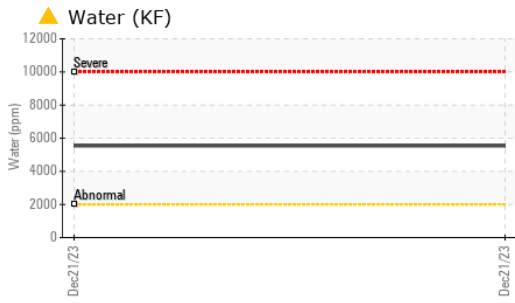
There is a moderate concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>21</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	---	---
Water	%	ASTM D6304	>0.2	<b>▲ 0.554</b>	---	---
ppm Water	ppm	ASTM D6304	>2000	<b>▲ 5540</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>0.2%</b>	---	---

## FLUID CONDITION

The oil viscosity is higher than normal. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>0</b>	---	---
Boron	ppm	ASTM D5185m	50	<b>20</b>	---	---
Barium	ppm	ASTM D5185m	15	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	15	<b>0</b>	---	---
Manganese	ppm	ASTM D5185m		<b>2</b>	---	---
Magnesium	ppm	ASTM D5185m	50	<b>3</b>	---	---
Calcium	ppm	ASTM D5185m	50	<b>10</b>	---	---
Phosphorus	ppm	ASTM D5185m	350	<b>582</b>	---	---
Zinc	ppm	ASTM D5185m	100	<b>127</b>	---	---
Sulfur	ppm	ASTM D5185m	12500	<b>14215</b>	---	---
Visc @ 40°C	cSt	ASTM D445	220	<b>▲ 253</b>	---	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0867408 **Received** : 10 Jan 2024  
**Lab Number** : 06057508 **Diagnosed** : 12 Jan 2024  
**Unique Number** : 10823457 **Diagnostician** : Sean Felton  
**Test Package** : CONST ( Additional Tests: KF )

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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