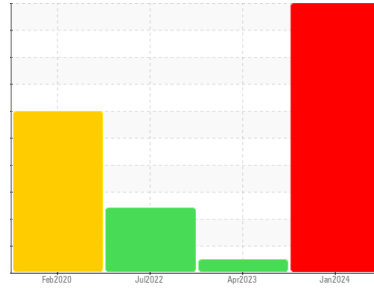




# PROBLEM SUMMARY

Sample Rating Trend

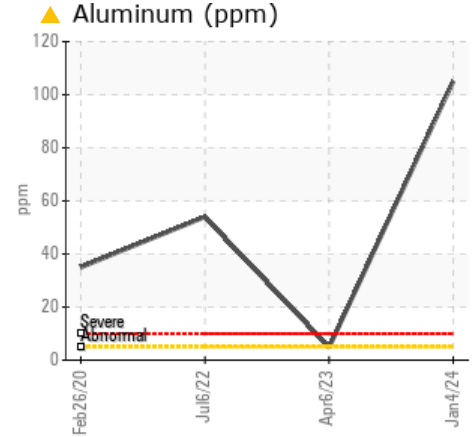
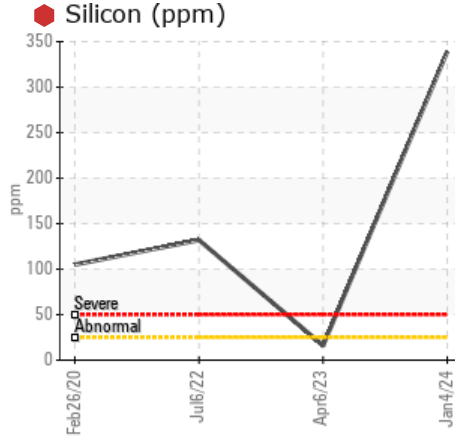
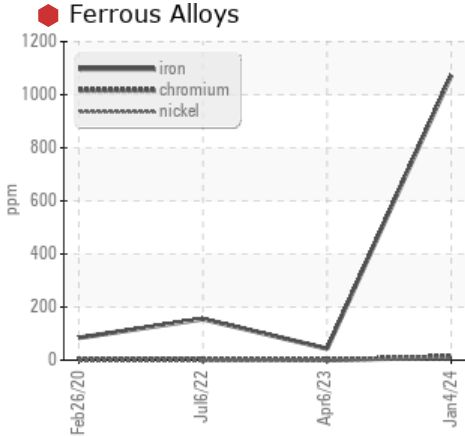


WEAR



Machine Id  
**LIEBHERR CR-6611**  
 Component  
**1 Winch**  
 Fluid  
**GEAR OIL ISO 220 (--- GAL)**

## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>150	● <b>1073</b>	43	155
Chromium	ppm	ASTM D5185m	>10	▲ <b>14</b>	<1	2
Nickel	ppm	ASTM D5185m	>10	▲ <b>6</b>	0	<1
Silicon	ppm	ASTM D5185m	>25	● <b>339</b>	16	▲ 132

Customer Id: BUCGRA  
 Sample No.: WC0873348  
 Lab Number: 06074228  
 Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check all areas where dirt can enter the system.

## HISTORICAL DIAGNOSIS

### 06 Apr 2023 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



### 06 Jul 2022 Diag: Jonathan Hester

DIRT



We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The condition of the oil is acceptable for the time in service.

view report



### 26 Feb 2020 Diag: Don Baldrige

WATER



We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a high concentration of water present in the oil. The oil viscosity is lower than normal. Confirm oil type.

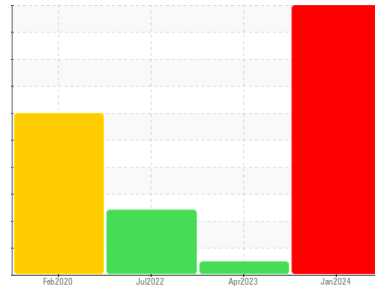
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id  
**LIEBHERR CR-6611**

Component

**1 Winch**

Fluid

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

## DIAGNOSIS

### Recommendation

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

### Wear

Gear wear is indicated.

### Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

### Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0873348</b>	WC0746699	WC0704516
Sample Date	Client Info		<b>04 Jan 2024</b>	06 Apr 2023	06 Jul 2022
Machine Age	hrs	Client Info	<b>13887</b>	13215	12454
Oil Age	hrs	Client Info	<b>0</b>	754	404
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>SEVERE</b>	NORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	<b>1073</b>	43	155
Chromium	ppm	ASTM D5185m >10	<b>14</b>	<1	2
Nickel	ppm	ASTM D5185m >10	<b>6</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>4</b>	<1	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >5	<b>105</b>	5	54
Lead	ppm	ASTM D5185m >15	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m >80	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Antimony	ppm	ASTM D5185m >5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	<b>29</b>	12	54
Barium	ppm	ASTM D5185m 15	<b>7</b>	0	1
Molybdenum	ppm	ASTM D5185m 15	<b>2</b>	0	<1
Manganese	ppm	ASTM D5185m	<b>6</b>	<1	1
Magnesium	ppm	ASTM D5185m 50	<b>24</b>	2	11
Calcium	ppm	ASTM D5185m 50	<b>170</b>	10	38
Phosphorus	ppm	ASTM D5185m 350	<b>737</b>	404	623
Zinc	ppm	ASTM D5185m 100	<b>38</b>	11	24
Sulfur	ppm	ASTM D5185m 12500	<b>6297</b>	7383	16542

## CONTAMINANTS

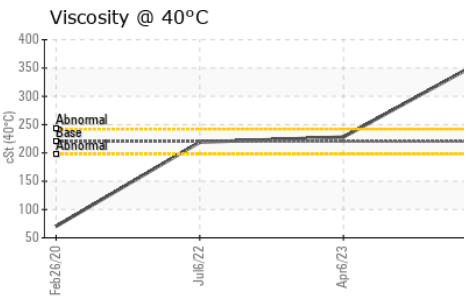
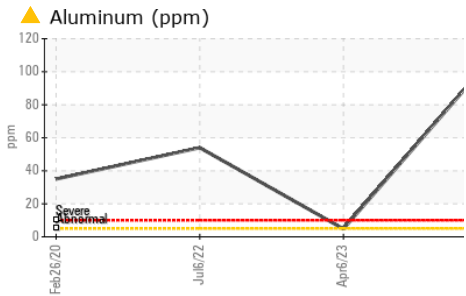
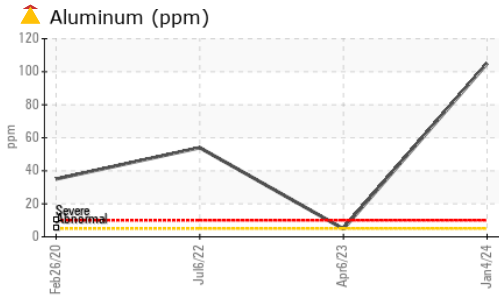
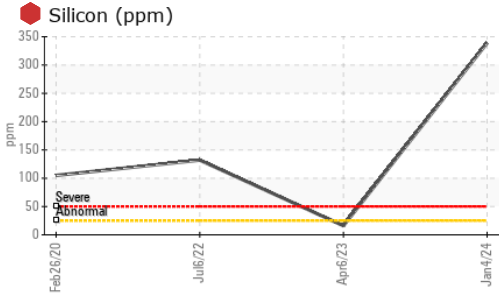
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>339</b>	16	132
Sodium	ppm	ASTM D5185m	<b>10</b>	0	5
Potassium	ppm	ASTM D5185m >20	<b>17</b>	3	11

## VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual NONE	<b>MODER</b>	MODER	NONE
Debris	scalar	*Visual NONE	<b>NONE</b>	NONE	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>	0.2%	0.2%
Free Water	scalar	*Visual	<b>NEG</b>	NEG	NEG



# OIL ANALYSIS REPORT

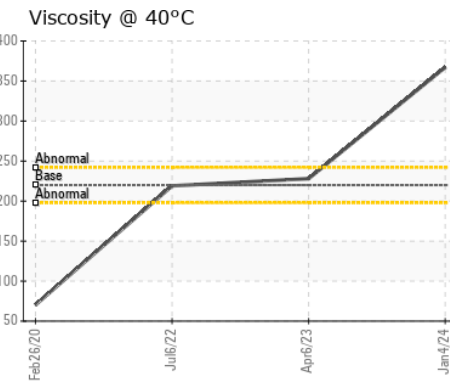
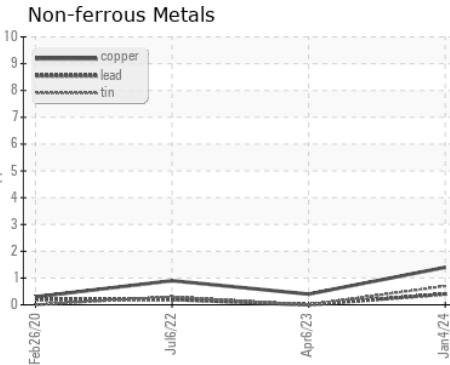
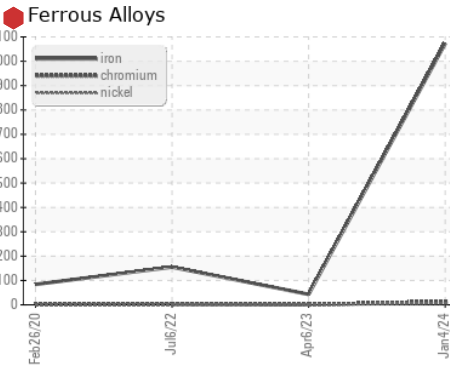


FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 220	367.1	228	219

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color				no image	no image
Bottom				no image	no image

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0873348 **Received** : 30 Jan 2024  
**Lab Number** : 06074228 **Diagnosed** : 02 Feb 2024  
**Unique Number** : 10856319 **Diagnostician** : Jonathan Hester  
**Test Package** : CONST

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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