



OIL ANALYSIS REPORT

Sample Rating Trend

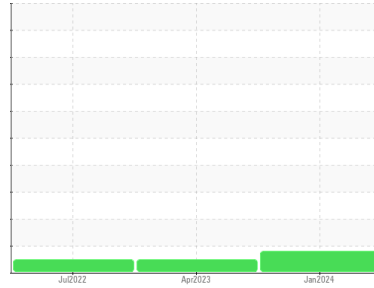
WEAR



Machine Id
LIEBHERR CR6611 - INNER

Component
Rear Right Final Drive

Fluid
GEAR OIL ISO 220 (--- GAL)



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

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

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0873285 | WC0746697 | WC0687189 |
| Sample Date | Client Info | | 05 Jan 2024 | 06 Apr 2023 | 06 Jul 2022 |
| Machine Age | hrs | Client Info | 13889 | 13215 | 12454 |
| Oil Age | hrs | Client Info | 0 | 754 | 404 |
| Oil Changed | Client Info | | Changed | Changed | Changed |
| Sample Status | | | ATTENTION | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|----------|--------|-------------|---------|-------------|----------|----|
| Iron | ppm | ASTM D5185m | >500 | 56 | 54 | 51 |
| Chromium | ppm | ASTM D5185m | >10 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 2 | 2 | 2 |
| Lead | ppm | ASTM D5185m | >25 | 5 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >50 | ▲ 43 | 2 | 1 |
| Tin | ppm | ASTM D5185m | >10 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|-------------|---------|--------------|----------|-----|
| Boron | ppm | ASTM D5185m | 50 | 4 | 2 | 2 |
| Barium | ppm | ASTM D5185m | 15 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 15 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 50 | <1 | <1 | 0 |
| Calcium | ppm | ASTM D5185m | 50 | 4 | 4 | 5 |
| Phosphorus | ppm | ASTM D5185m | 350 | 415 | 364 | 417 |
| Zinc | ppm | ASTM D5185m | 100 | 33 | 7 | 2 |
| Sulfur | ppm | ASTM D5185m | 12500 | 5652 | 5626 | 623 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|-------------|---------|----------|----------|----|
| Silicon | ppm | ASTM D5185m | >75 | 8 | 8 | 14 |
| Sodium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | 0 |

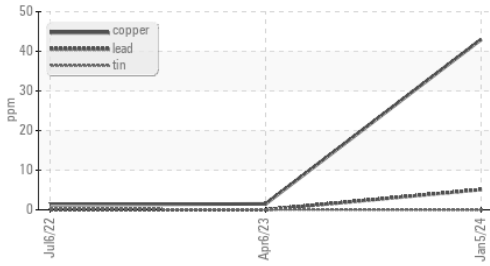
VISUAL

| | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | MODER | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | 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 |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

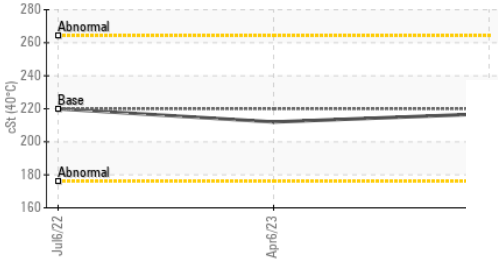


OIL ANALYSIS REPORT

▲ Non-ferrous Metals

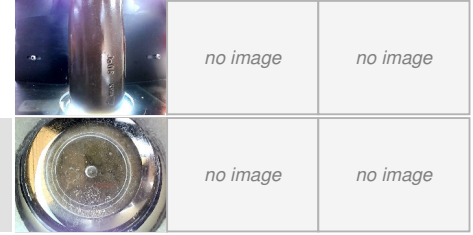


Viscosity @ 40°C



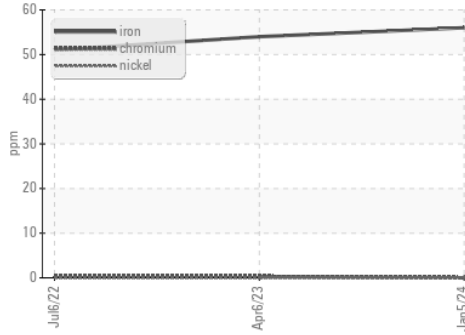
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 220 | 217 | 212 | 220 |

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

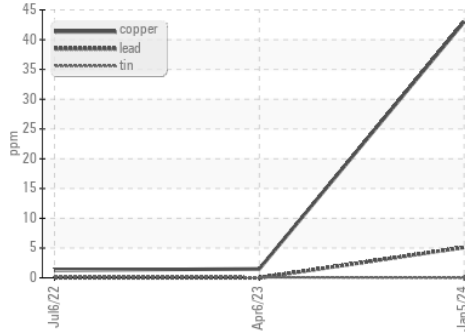


GRAPHS

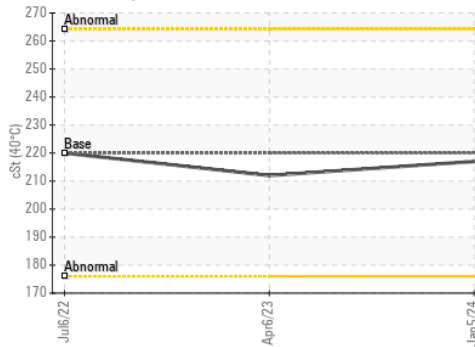
Ferrous Alloys



▲ Non-ferrous Metals



Viscosity @ 40°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0873285 **Received** : 10 Jan 2024
Lab Number : 06057512 **Diagnosed** : 12 Jan 2024
Unique Number : 10823461 **Diagnostician** : Sean Felton
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)

BUCKNER HEAVY LIFT

4732 NC 54 EAST
GRAHAM, NC
US 27253-9215

Contact: MICHAEL LAWSON
michaell@bucknercompanies.com

T: (336)376-8888
F: (336)376-4090