CONST

# LIEBHERR

OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
## LIEBHERR LH50 1216-118499
Component
## Front Left Wheel Hub
Fluid
## GEAR OIL SAE 80W90 (--- GAL)

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

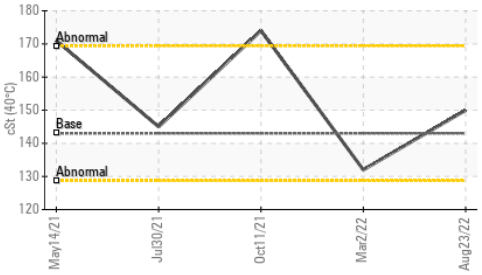
There is no indication of any contamination in the oil.

## FLUID CONDITION

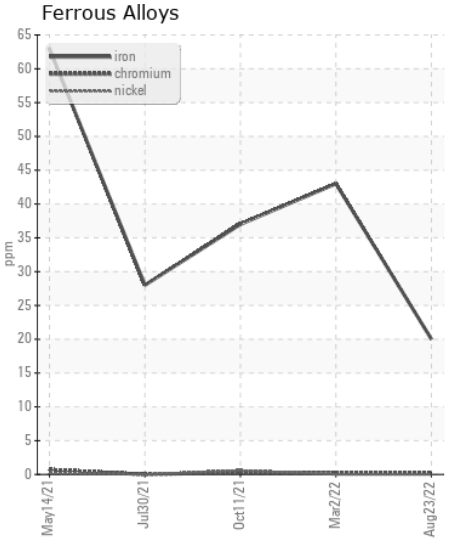
The condition of the oil is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | LH0236512 | LH0207679 | LH0199993 |
| Sample Date | | Client Info | | 23 Aug 2022 | 02 Mar 2022 | 11 Oct 2021 |
| Machine Age | hrs | Client Info | | 4046 | 3020 | 2045 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Not Changd | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >450 | 20 | 43 | 37 |
| Chromium | ppm | ASTM D5185m | >3 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 8 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >80 | 8 | 6 | 8 |
| Tin | ppm | ASTM D5185m | >3 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >90 | 3 | 4 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 4 | 0 | 0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| 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 |
| Sodium | ppm | ASTM D5185m | >170 | 7 | 2 | 10 |
| Boron | ppm | ASTM D5185m | 400 | 25 | 82 | 30 |
| Barium | ppm | ASTM D5185m | 200 | 0 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 12 | <1 | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 12 | 3 | 3 | 10 |
| Calcium | ppm | ASTM D5185m | 150 | 24 | 47 | 84 |
| Phosphorus | ppm | ASTM D5185m | 1650 | 1925 | 1623 | 1654 |
| Zinc | ppm | ASTM D5185m | 125 | 19 | 18 | 26 |
| Sulfur | ppm | ASTM D5185m | 22500 | 25056 | 22312 | 38919 |
| Visc @ 40°C | cSt | ASTM D445 | 143 | 150 | 132 | 174 |

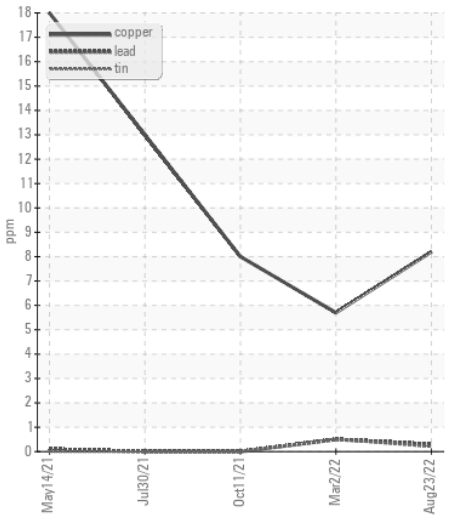
Viscosity @ 40°C



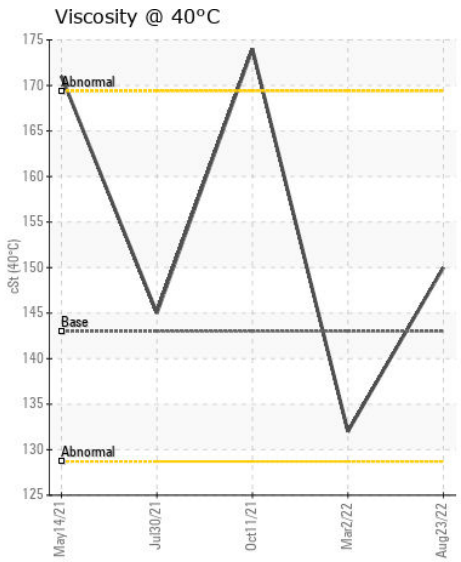

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 40°C




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : LH0236512
**Lab Number** : 05632593
**Unique Number** : 10117114
**Test Package** : CONST

**Received** : 01 Sep 2022
**Tested** : 02 Sep 2022
**Diagnosed** : 03 Sep 2022 - Don Baldridge

*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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