



LIEBHERR

OIL ANALYSIS REPORT

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



Machine Id
LIEBHERR L586 068511-1761
Component
Rear Differential
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LH0291285 | LH0261348 | LH0256856 |
| Sample Date | | Client Info | | 10 Jun 2024 | 24 May 2023 | 04 Apr 2023 |
| Machine Age | hrs | Client Info | | 3246 | 1041 | 700 |
| 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 | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |

WEAR

Tin ppm levels are abnormal. An increase in the copper level is noted. An increase in the lead level is noted. Bearing and/or bushing wear is indicated.

| | | | | | | |
|--------------|--------|---------------|-------|--------------|-------|-------|
| Iron | ppm | ASTM D5185(m) | >1500 | 273 | 83 | 201 |
| Chromium | ppm | ASTM D5185(m) | >10 | 2 | <1 | 2 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | <1 | 2 |
| Titanium | ppm | ASTM D5185(m) | >5 | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | <1 | <1 | 2 |
| Lead | ppm | ASTM D5185(m) | >5 | 4 | 1 | 2 |
| Copper | ppm | ASTM D5185(m) | >200 | 189 | 51 | 91 |
| Tin | ppm | ASTM D5185(m) | >10 | ▲ 16 | 3 | 6 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| White Metal | scalar | Visual* | NONE | NONE | VLITE | LIGHT |
| Yellow Metal | scalar | Visual* | NONE | VLITE | NONE | NONE |

CONTAMINATION

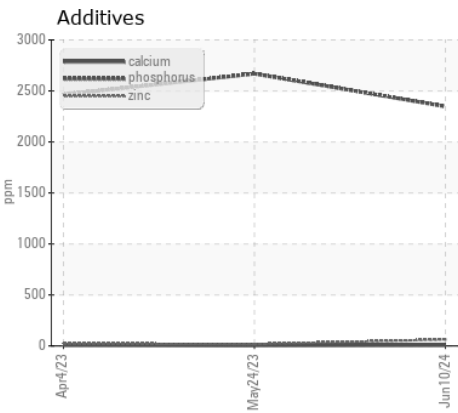
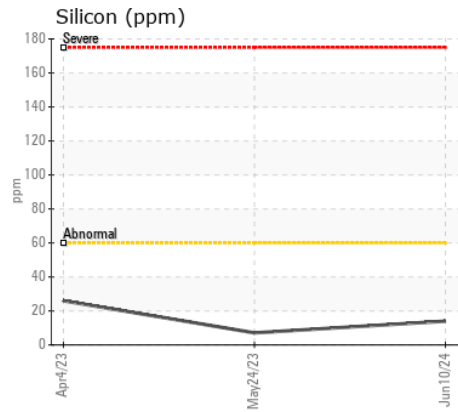
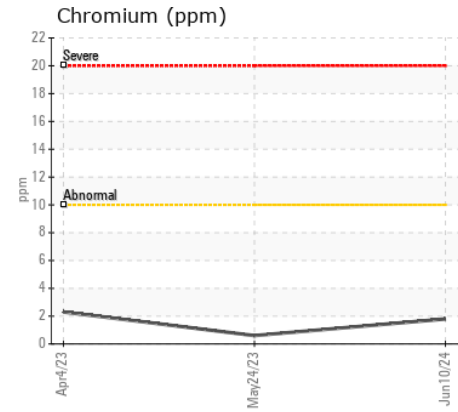
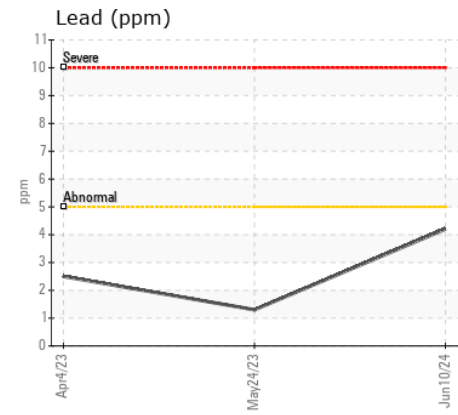
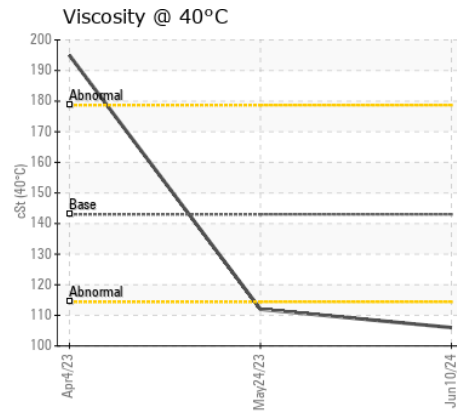
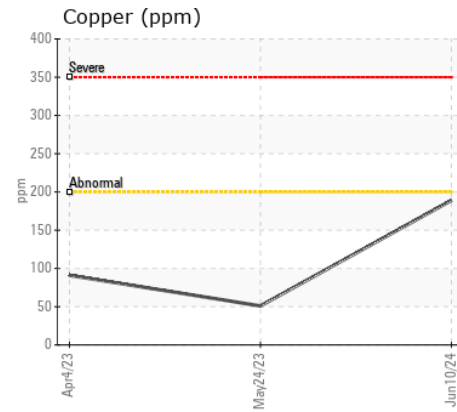
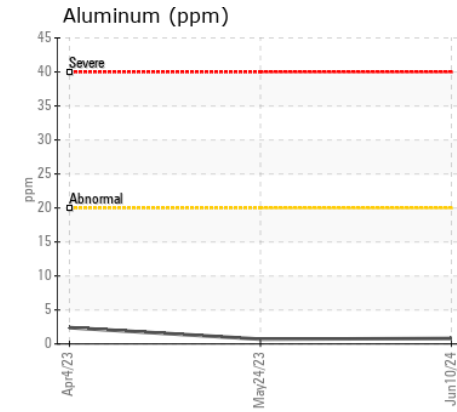
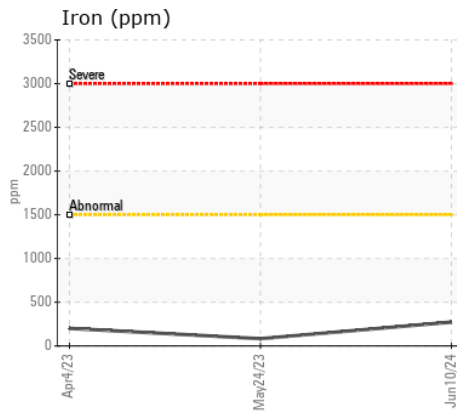
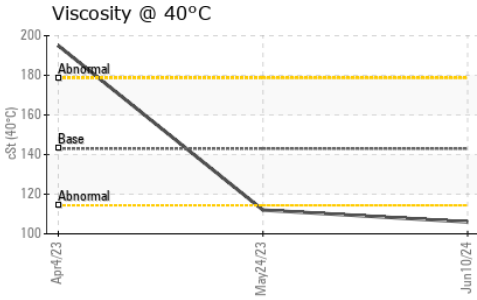
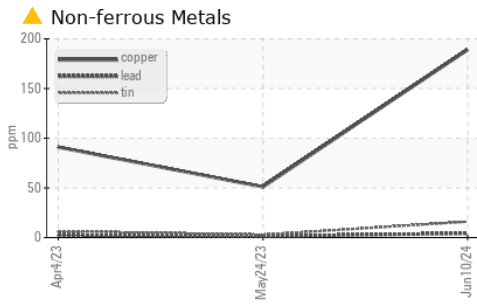
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|---------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185(m) | >60 | 14 | 7 | 26 |
| Potassium | ppm | ASTM D5185(m) | >20 | 2 | 1 | 0 |
| Water | | WC Method | >.2 | NEG | NEG | NEG |
| Silt | scalar | Visual* | NONE | VLITE | NONE | NONE |
| Debris | scalar | Visual* | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | NONE | VLITE | NONE |
| Appearance | scalar | Visual* | NORML | NORML | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >.2 | NEG | NEG | NEG |

FLUID CONDITION

Viscosity of sample indicates oil is within SAE 75W90 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| | | | | | | |
|-------------|-----|---------------|-------|--------------|-------|-------|
| Sodium | ppm | ASTM D5185(m) | >170 | 6 | 3 | 8 |
| Boron | ppm | ASTM D5185(m) | 400 | 199 | 228 | 2 |
| Barium | ppm | ASTM D5185(m) | 200 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 12 | 0 | 0 | <1 |
| Manganese | ppm | ASTM D5185(m) | | 18 | 13 | 58 |
| Magnesium | ppm | ASTM D5185(m) | 12 | 2 | 1 | 3 |
| Calcium | ppm | ASTM D5185(m) | 150 | 7 | 5 | 9 |
| Phosphorus | ppm | ASTM D5185(m) | 1650 | 2348 | 2669 | 2464 |
| Zinc | ppm | ASTM D5185(m) | 125 | 63 | 17 | 23 |
| Sulfur | ppm | ASTM D5185(m) | 22500 | 20587 | 21858 | 27580 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 143 | 106 | 112 | 195 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0291285 **Received** : 11 Jun 2024
Lab Number : 02641229 **Tested** : 11 Jun 2024
Unique Number : 5798768 **Diagnosed** : 12 Jun 2024 - Kevin Marson
Test Package : MOB 1

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.

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