



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR A910 143059-1837**  
Component  
**Hydraulic System**  
Fluid  
**AW HYDRAULIC OIL ISO 46 (200 LTR)**

### RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

| Test           | UOM | Method      | Limit/Abn | Current     | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|----------|----------|
| Sample Number  |     | Client Info |           | LH0238949   | ---      | ---      |
| Sample Date    |     | Client Info |           | 01 Mar 2024 | ---      | ---      |
| Machine Age    | hrs | Client Info |           | 446         | ---      | ---      |
| Oil Age        | hrs | Client Info |           | 0           | ---      | ---      |
| Filter Age     | hrs | Client Info |           | 0           | ---      | ---      |
| Oil Changed    |     | Client Info |           | Not Changd  | ---      | ---      |
| Filter Changed |     | Client Info |           | N/A         | ---      | ---      |
| Sample Status  |     |             |           | ABNORMAL    | ---      | ---      |

### WEAR

All component wear rates are normal.

|              |        |               |      |      |     |     |
|--------------|--------|---------------|------|------|-----|-----|
| Iron         | ppm    | ASTM D5185(m) | >60  | 8    | --- | --- |
| Chromium     | ppm    | ASTM D5185(m) | >40  | 1    | --- | --- |
| Nickel       | ppm    | ASTM D5185(m) | >10  | <1   | --- | --- |
| Titanium     | ppm    | ASTM D5185(m) |      | 0    | --- | --- |
| Silver       | ppm    | ASTM D5185(m) |      | 1    | --- | --- |
| Aluminum     | ppm    | ASTM D5185(m) | >5   | 1    | --- | --- |
| Lead         | ppm    | ASTM D5185(m) | >5   | 2    | --- | --- |
| Copper       | ppm    | ASTM D5185(m) | >15  | 5    | --- | --- |
| Tin          | ppm    | ASTM D5185(m) | >5   | 0    | --- | --- |
| Vanadium     | ppm    | ASTM D5185(m) |      | 0    | --- | --- |
| White Metal  | scalar | Visual*       | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual*       | NONE | NONE | --- | --- |

### CONTAMINATION

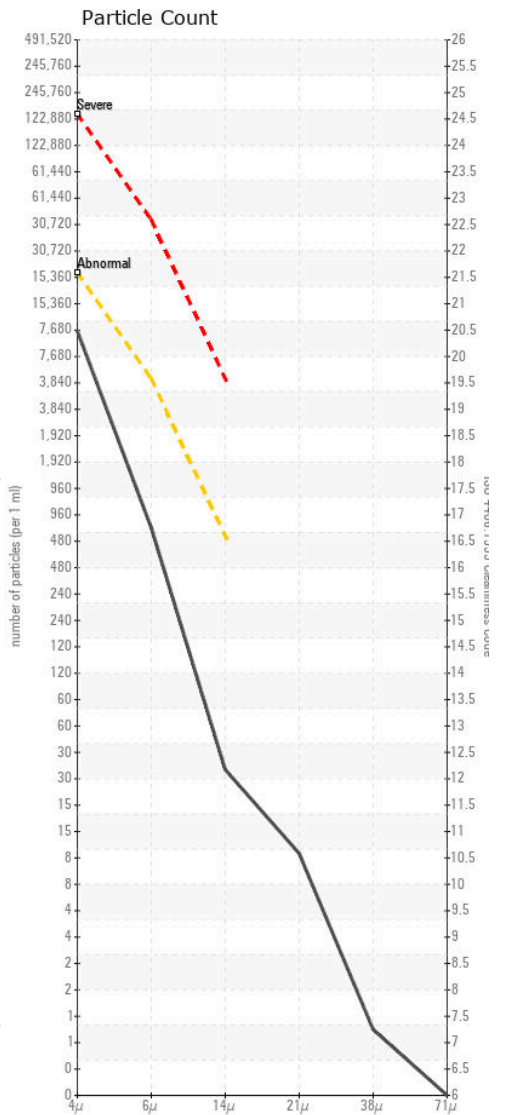
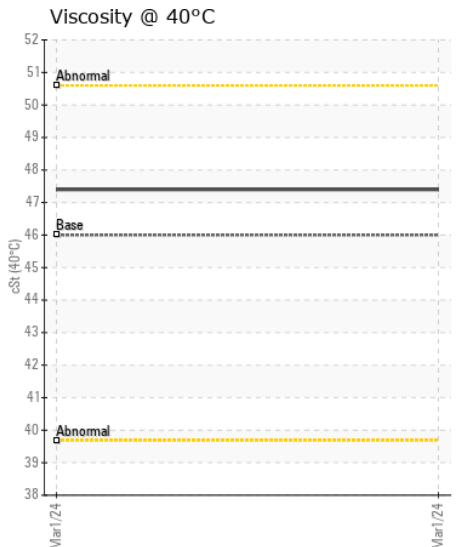
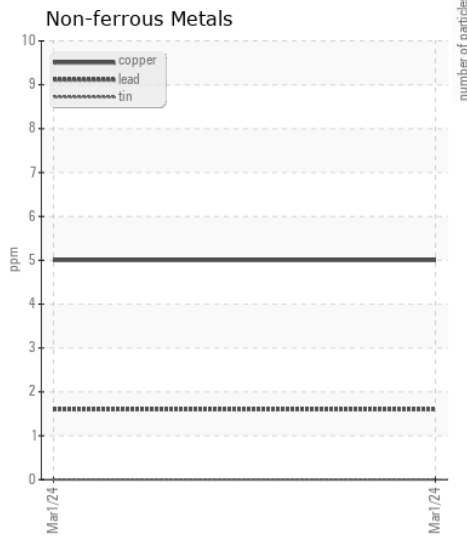
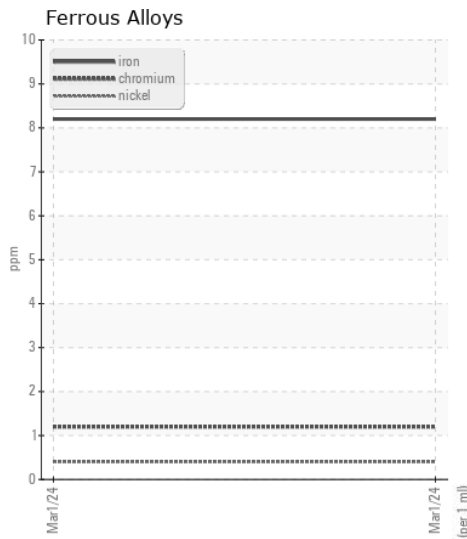
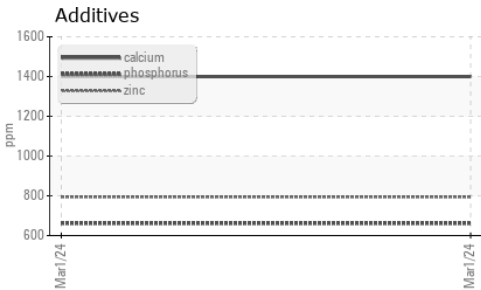
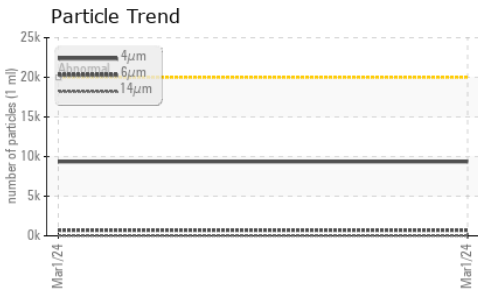
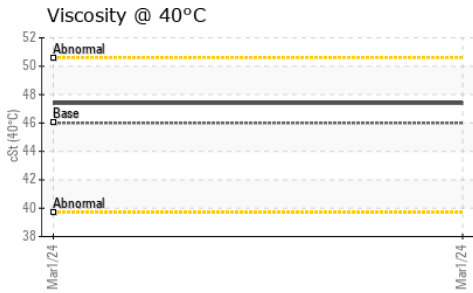
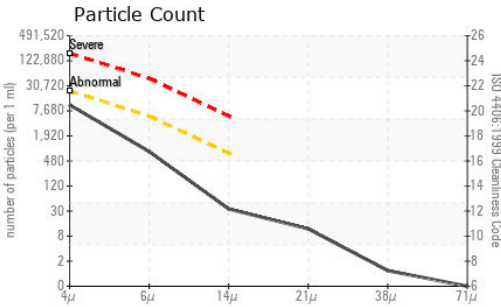
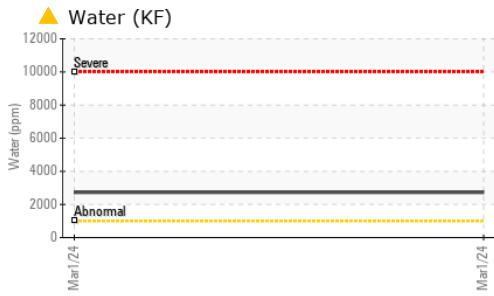
There is a moderate concentration of water present in the oil. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

|                  |        |               |           |          |     |     |
|------------------|--------|---------------|-----------|----------|-----|-----|
| Silicon          | ppm    | ASTM D5185(m) | >15       | 3        | --- | --- |
| Potassium        | ppm    | ASTM D5185(m) | >20       | 3        | --- | --- |
| Water            | %      | ASTM D6304*   | >0.1      | ▲ 0.272  | --- | --- |
| ppm Water        | ppm    | ASTM D6304*   | >1000     | ▲ 2728   | --- | --- |
| Particles >4µm   |        | ASTM D7647    | >20000    | 9356     | --- | --- |
| Particles >6µm   |        | ASTM D7647    | >5000     | 710      | --- | --- |
| Particles >14µm  |        | ASTM D7647    | >640      | 30       | --- | --- |
| Particles >21µm  |        | ASTM D7647    | >160      | 10       | --- | --- |
| Particles >38µm  |        | ASTM D7647    | >40       | 1        | --- | --- |
| Particles >71µm  |        | ASTM D7647    | >10       | 0        | --- | --- |
| Oil Cleanliness  |        | ISO 4406 (c)  | >21/19/16 | 20/17/12 | --- | --- |
| Silt             | scalar | Visual*       | NONE      | NONE     | --- | --- |
| Debris           | scalar | Visual*       | NONE      | NONE     | --- | --- |
| Sand/Dirt        | scalar | Visual*       | NONE      | NONE     | --- | --- |
| Appearance       | scalar | Visual*       | NORML     | ▲ HAZY   | --- | --- |
| Odor             | scalar | Visual*       | NORML     | NORML    | --- | --- |
| Emulsified Water | scalar | Visual*       | >0.1      | NEG      | --- | --- |

### FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

|             |     |               |      |      |     |     |
|-------------|-----|---------------|------|------|-----|-----|
| Sodium      | ppm | ASTM D5185(m) |      | 2    | --- | --- |
| Boron       | ppm | ASTM D5185(m) | 5    | 2    | --- | --- |
| Barium      | ppm | ASTM D5185(m) | 5    | <1   | --- | --- |
| Molybdenum  | ppm | ASTM D5185(m) | 5    | 3    | --- | --- |
| Manganese   | ppm | ASTM D5185(m) |      | 0    | --- | --- |
| Magnesium   | ppm | ASTM D5185(m) | 25   | 56   | --- | --- |
| Calcium     | ppm | ASTM D5185(m) | 200  | 1400 | --- | --- |
| Phosphorus  | ppm | ASTM D5185(m) | 300  | 662  | --- | --- |
| Zinc        | ppm | ASTM D5185(m) | 370  | 794  | --- | --- |
| Sulfur      | ppm | ASTM D5185(m) | 2500 | 3707 | --- | --- |
| Visc @ 40°C | cSt | ASTM D7279(m) | 46   | 47.4 | --- | --- |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0238949 **Received** : 05 Mar 2024  
**Lab Number** : 02619952 **Tested** : 07 Mar 2024  
**Unique Number** : 5737062 **Diagnosed** : 07 Mar 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: KF, PrtCount )

**FORACTION INC.**  
 270 RUE BRUNET  
 MONT ST-HILAIRE, QC  
 CA J3H 0M6  
 Contact: Service Manager

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.

T:  
F: