



OIL ANALYSIS REPORT

| | |
|-----------------|-----------|
| WEAR | NORMAL |
| CONTAMINATION | SEVERE |
| FLUID CONDITION | ATTENTION |

Machine Id
FREIGHTLINER 747

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (18 QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

Test for glycol is positive. There is a high concentration of glycol present in the oil.

FLUID CONDITION

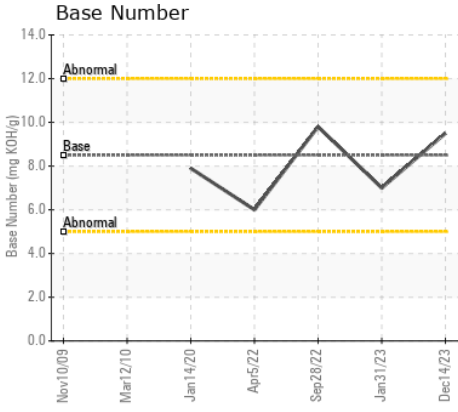
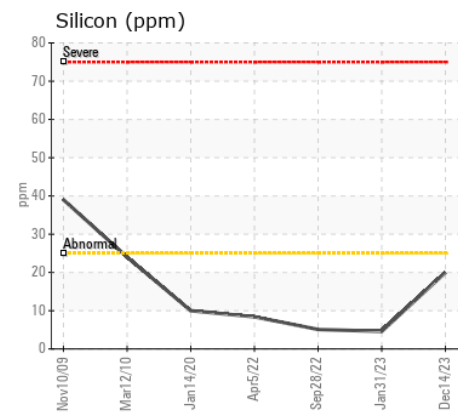
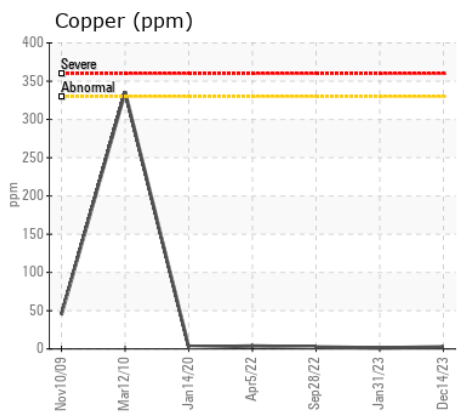
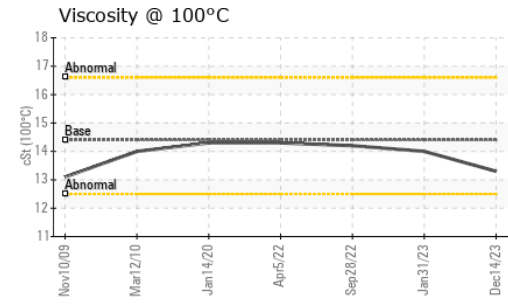
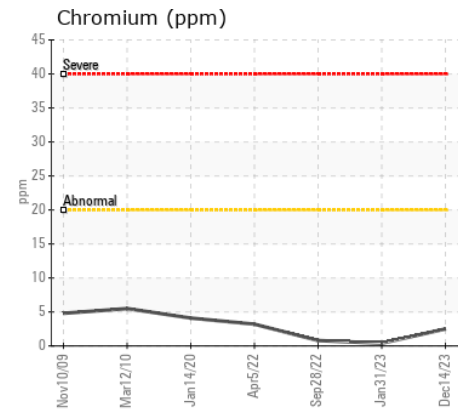
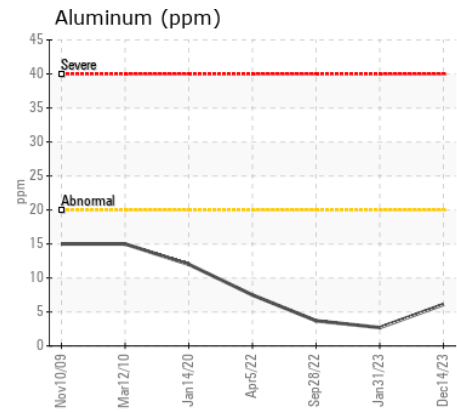
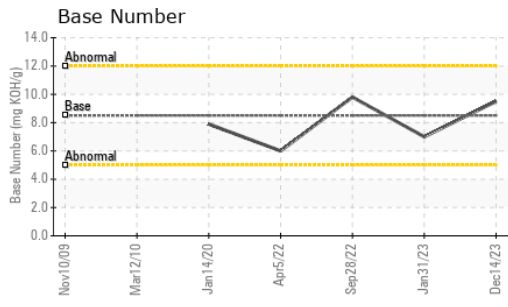
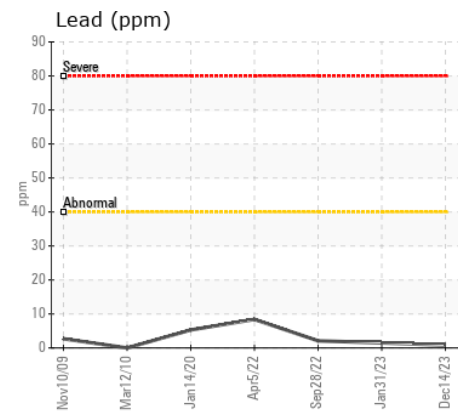
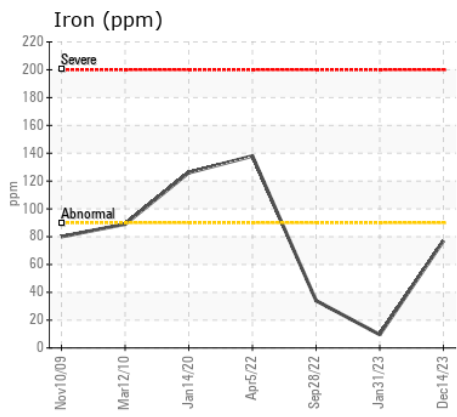
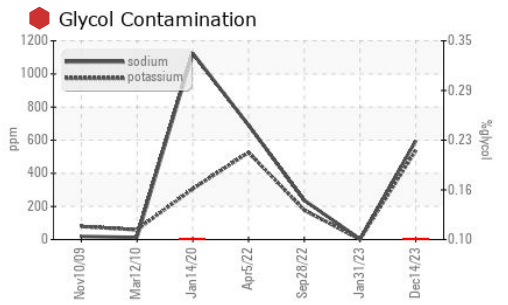
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0870667 | WC0773038 | WC0743007 |
| Sample Date | | Client Info | | 14 Dec 2023 | 31 Jan 2023 | 28 Sep 2022 |
| Machine Age | mls | Client Info | | 244288 | 234100 | 229044 |
| Oil Age | mls | Client Info | | 0 | 0 | 0 |
| Filter Age | mls | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | SEVERE | NORMAL | ABNORMAL |

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >90 | 77 | 10 | 34 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 6 | 3 | 4 |
| Lead | ppm | ASTM D5185m | >40 | <1 | 2 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 3 | 1 | 3 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 20 | 5 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | 538 | <1 | 178 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | % | *ASTM D2982 | | 0.10 | NEG | NEG |
| Soot % | % | *ASTM D7844 | >6 | 2.5 | 0.2 | 1.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 14.2 | 8.9 | 10.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.6 | 18.3 | 22.4 |
| 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 | >158 | 596 | 3 | 237 |
| Boron | ppm | ASTM D5185m | 250 | 21 | 58 | 46 |
| Barium | ppm | ASTM D5185m | 10 | 4 | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | 100 | 127 | 84 | 99 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | 144 | 57 | 41 |
| Calcium | ppm | ASTM D5185m | 3000 | 1745 | 2162 | 2077 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 928 | 1017 | 998 |
| Zinc | ppm | ASTM D5185m | 1350 | 1062 | 1206 | 1182 |
| Sulfur | ppm | ASTM D5185m | 4250 | 3694 | 4480 | 4377 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.2 | 13.8 | 14.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 9.5 | 7.0 | 9.8 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.3 | 14.0 | 14.2 |



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0870667 **Received** : 12 Jan 2024
Lab Number : 06059769 **Diagnosed** : 16 Jan 2024
Unique Number : 10831151 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

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 F: x:

Certificate L2367
 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)