



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

Machine Id
FREIGHTLINER 11198C
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (9 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0109587 | GFL0087544 | GFL0087476 |
| Sample Date | | Client Info | | 07 Feb 2024 | 14 Sep 2023 | 05 Sep 2023 |
| Machine Age | hrs | Client Info | | 3154 | 2559 | 2517 |
| Oil Age | hrs | Client Info | | 1170 | 575 | 533 |
| Filter Age | hrs | Client Info | | 1170 | 575 | 533 |
| Oil Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |

WEAR

The chromium level is abnormal. The lead level is abnormal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >50 | 26 | 12 | 12 |
| Chromium | ppm | ASTM D5185m | >4 | ▲ 8 | 3 | 3 |
| Nickel | ppm | ASTM D5185m | >2 | 1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | 3 | 2 | 2 |
| Lead | ppm | ASTM D5185m | >30 | ▲ 32 | 2 | <1 |
| Copper | ppm | ASTM D5185m | >35 | 32 | 24 | 25 |
| Tin | ppm | ASTM D5185m | >4 | 1 | 2 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

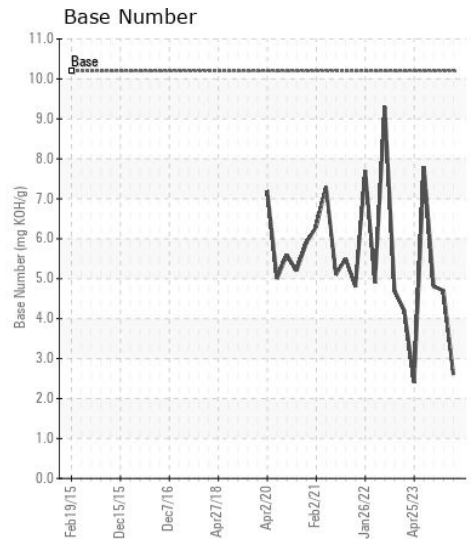
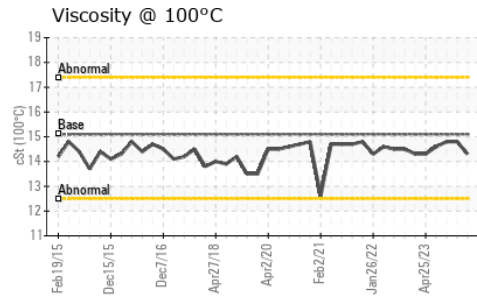
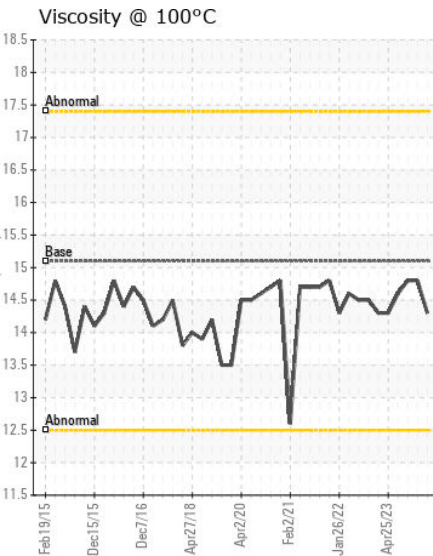
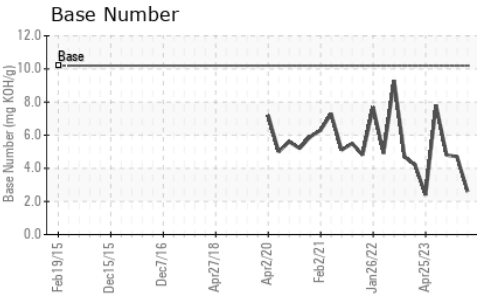
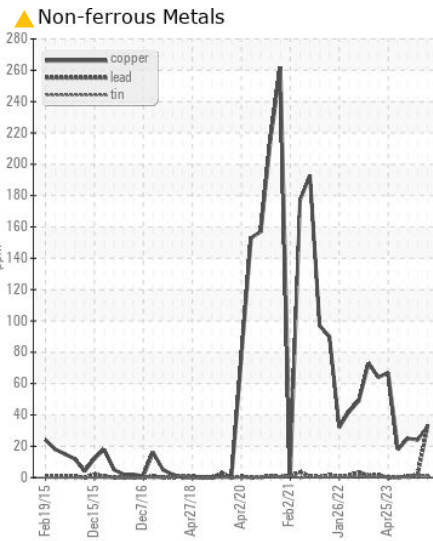
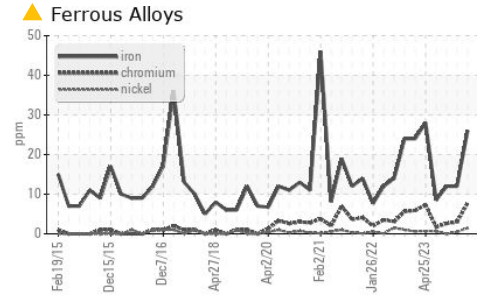
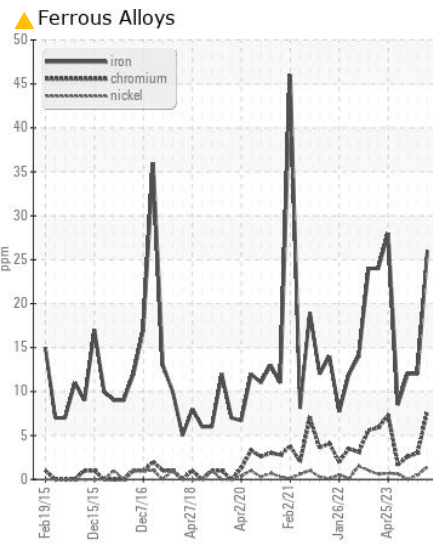
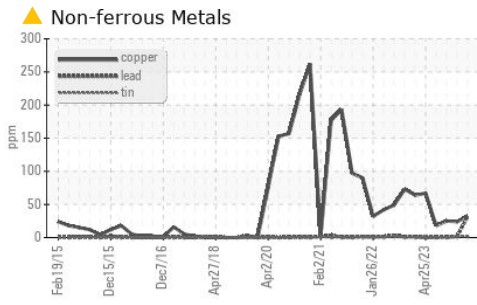
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >+100 | 6 | 7 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | 6 | 4 | 1 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0 | 0.1 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 13.9 | 10.4 | 10.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 26.7 | 19.9 | 20.1 |
| 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 | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 10 | 8 | 8 |
| Boron | ppm | ASTM D5185m | 50 | 2 | 5 | 5 |
| Barium | ppm | ASTM D5185m | 5 | <1 | 44 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | 55 | 50 | 54 |
| Manganese | ppm | ASTM D5185m | 0 | 1 | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 560 | 576 | 503 | 572 |
| Calcium | ppm | ASTM D5185m | 1510 | 1687 | 1434 | 1698 |
| Phosphorus | ppm | ASTM D5185m | 780 | 809 | 613 | 692 |
| Zinc | ppm | ASTM D5185m | 870 | 993 | 884 | 972 |
| Sulfur | ppm | ASTM D5185m | 2040 | 2693 | 2396 | 2770 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 23.2 | 17.0 | 17.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | 2.6 | 4.7 | 4.8 |
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | 14.3 | 14.8 | 14.8 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109587
Lab Number : 06083348
Unique Number : 10870793
Test Package : FLEET

Received : 08 Feb 2024
Tested : 08 Feb 2024
Diagnosed : 09 Feb 2024 - Don Baldrige

GFL Environmental - 331 - Columbus
 180 Ada Moore Rd
 Columbus, NC
 US 28722

Contact: Matt Segars
 matt.segars@gflenv.com
 T: (800)207-6618
 F: (252)617-2494

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)