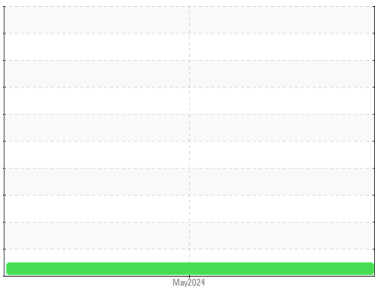
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## FREIGHTLINER 820061
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
Metal levels are typical for a new component breaking in.

**Contamination**
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

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

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0122272** | --- | --- |
| Sample Date | | Client Info | | **14 May 2024** | --- | --- |
| Machine Age | kms | Client Info | | **12943** | --- | --- |
| Oil Age | kms | Client Info | | **222** | --- | --- |
| Oil Changed | | Client Info | | **Changed** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | --- | --- |
| Water | | WC Method | >0.2 | **NEG** | --- | --- |
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >80 | **29** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >5 | **<1** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >2 | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >30 | **9** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >30 | **0** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >150 | **4** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >5 | **0** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

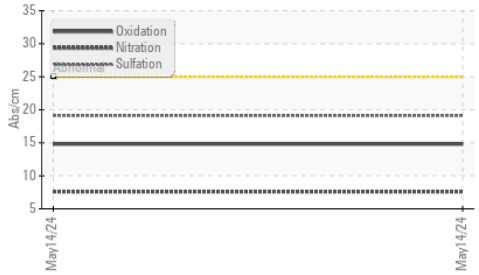
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **3** | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **60** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **983** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1059** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **961** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1166** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2443** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >20 | **3** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **2** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **9** | --- | --- |

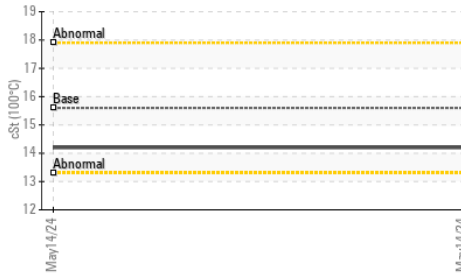
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **0.2** | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | **7.6** | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **19.1** | --- | --- |

# OIL ANALYSIS REPORT

FT-IR (Direct Trend)




Viscosity @ 100°C



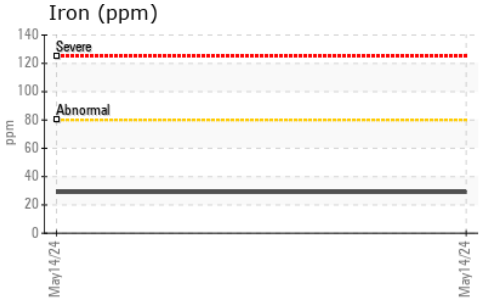

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **14.8** | --- | --- |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | --- | --- |
| Free Water | scalar | Visual* | | **NEG** | --- | --- |

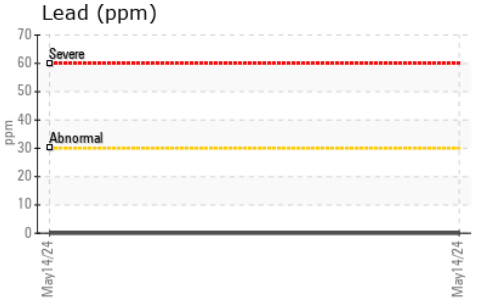
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.6 | **14.2** | --- | --- |

## GRAPHS

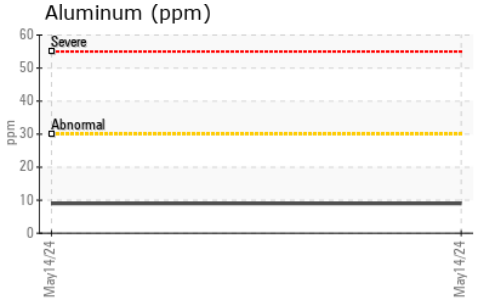
Iron (ppm)



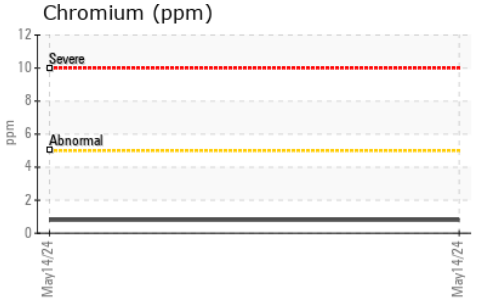

Lead (ppm)



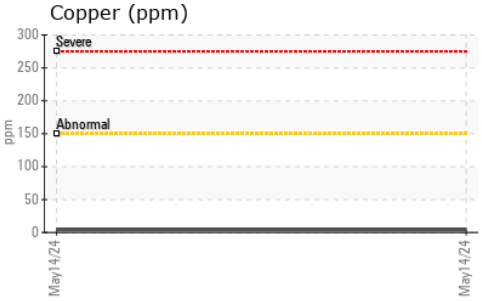

Aluminum (ppm)



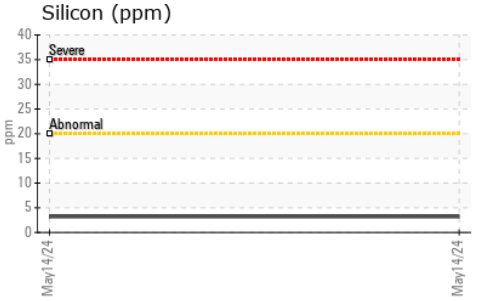

Chromium (ppm)



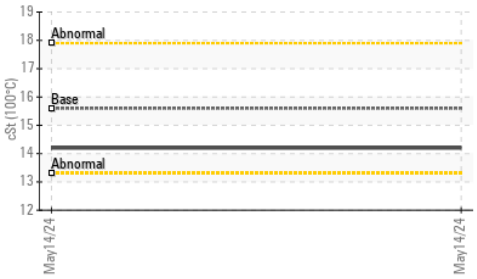

Copper (ppm)



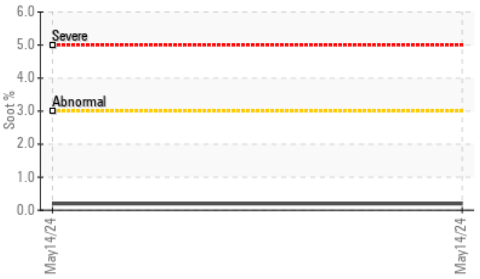

Silicon (ppm)




Viscosity @ 100°C




Soot %




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0122272
**Lab Number** : 02637370
**Unique Number** : 5786532
**Test Package** : MOB 1

**Received** : 24 May 2024
**Tested** : 24 May 2024
**Diagnosed** : 24 May 2024 - Wes Davis

*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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