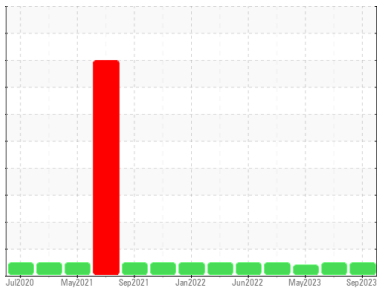
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**426012**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0090857** | GFL0082572 | GFL0082543 |
| Sample Date | | Client Info | | **18 Sep 2023** | 06 Jun 2023 | 31 May 2023 |
| Machine Age | kms | Client Info | | **0** | 404735 | 403986 |
| Oil Age | kms | Client Info | | **19633** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | 0.9 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >120 | **16** | 2 | 8 |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **2** | 1 | 2 |
| Lead | ppm | ASTM D5185(m) | >40 | **1** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | **<1** | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >15 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **51** | 8 | 30 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **11** | 54 | 45 |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **157** | 826 | 595 |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1999** | 1083 | 1662 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **1007** | 981 | 889 |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1169** | 1059 | 958 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2745** | 2457 | 2340 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

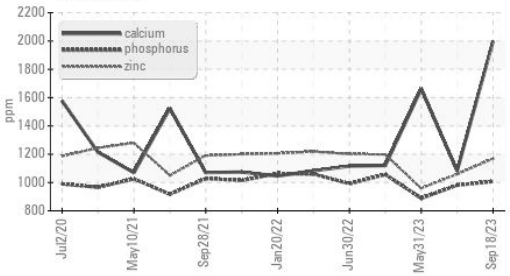
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **3** | 2 | 3 |
| Sodium | ppm | ASTM D5185(m) | | **6** | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | **5** | 0 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >4 | **0.7** | 0 | 0.3 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **9.0** | 5.0 | 8.8 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **23.9** | 18.5 | 21.9 |

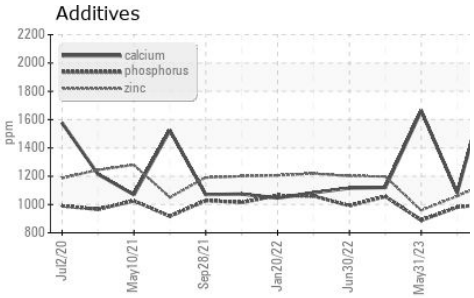
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **18.4** | 14.0 | 19.8 |

# OIL ANALYSIS REPORT

Additives




Additives

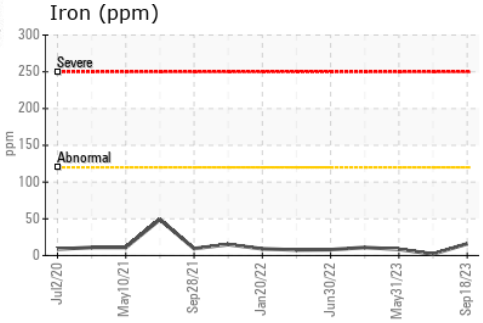



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

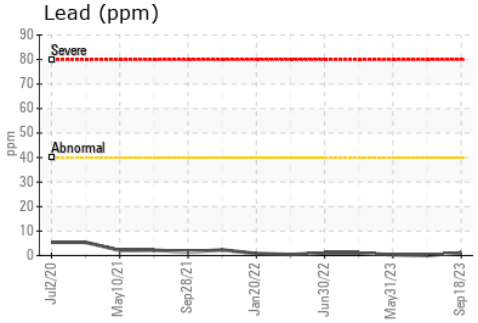
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | **14.6** | 13.9 | ▲ 11.8 |

## GRAPHS

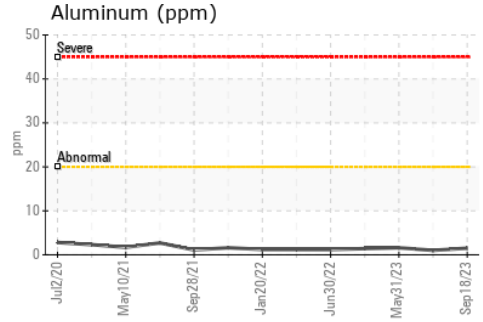
Iron (ppm)



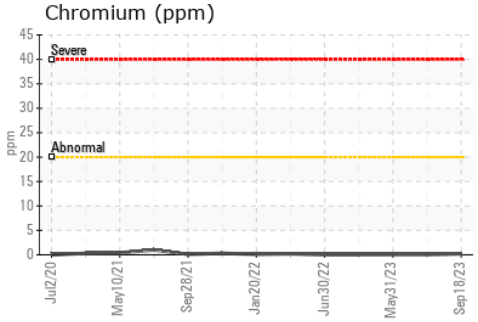

Lead (ppm)



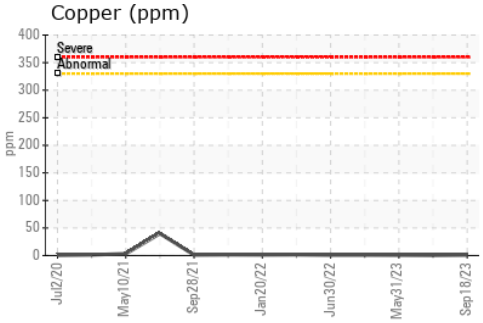

Aluminum (ppm)



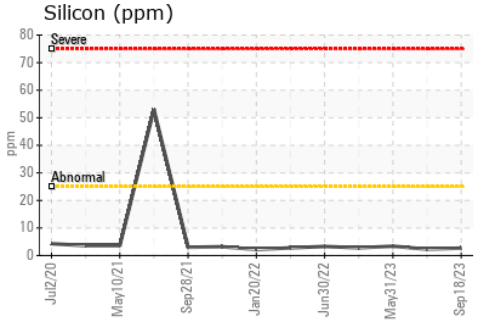

Chromium (ppm)



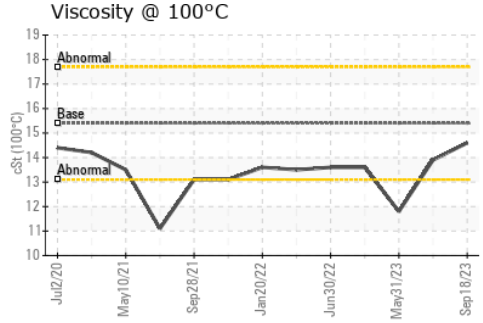

Copper (ppm)



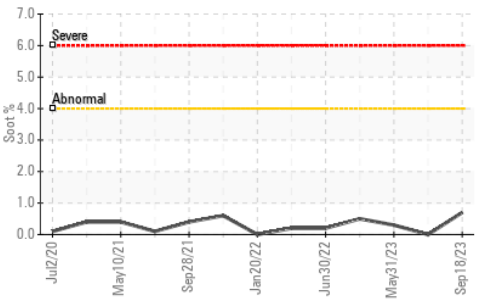

Silicon (ppm)




Viscosity @ 100°C




Soot %




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0090857
**Lab Number** : 02583531
**Unique Number** : 5644596
**Test Package** : MOB 1

**Received** : 19 Sep 2023
**Diagnosed** : 19 Sep 2023
**Diagnostician** : 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.*


**GFL Environmental - 246 - Windsor**
2700 Deziel Dr
Windsor, ON
CA N8W 5H8
Contact: Dave Varga
dvarga@gflenv.com
T: (519)944-8009
F: