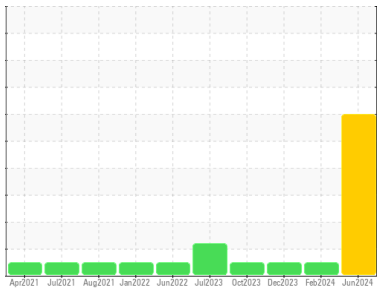
# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
**501036**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (--- LTR)**

## DIAGNOSIS

**▲ Recommendation**
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.

**▲ Wear**
Nickel ppm levels are severe. A sharp increase in the nickel level is noted. Exhaust valve wear is indicated.

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

**Fluid Condition**
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0119018** | GFL0102634 | GFL0101736 |
| Sample Date | | Client Info | | **13 Jun 2024** | 05 Feb 2024 | 10 Dec 2023 |
| Machine Age | kms | Client Info | | **869837** | 0 | 0 |
| Oil Age | kms | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **SEVERE** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >120 | **29** | 28 | 17 |
| Chromium | ppm | ASTM D5185(m) | >20 | **2** | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >5 | ▲ **20** | 4 | 2 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | **<1** | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **2** | 2 | 1 |
| Lead | ppm | ASTM D5185(m) | >40 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | **2** | 2 | 1 |
| Tin | ppm | ASTM D5185(m) | >15 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

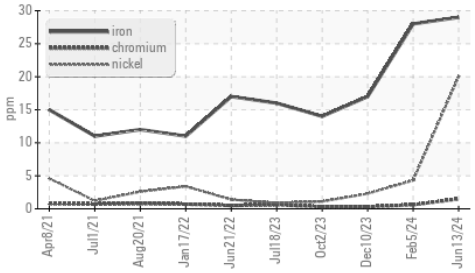
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 2 | **3** | 3 | 3 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 50 | **61** | 60 | 59 |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 950 | **953** | 947 | 927 |
| Calcium | ppm | ASTM D5185(m) | 1050 | **1045** | 1069 | 1050 |
| Phosphorus | ppm | ASTM D5185(m) | 995 | **959** | 982 | 943 |
| Zinc | ppm | ASTM D5185(m) | 1180 | **1162** | 1155 | 1137 |
| Sulfur | ppm | ASTM D5185(m) | 2600 | **2347** | 2583 | 2330 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **6** | 5 | 5 |
| Sodium | ppm | ASTM D5185(m) | | **24** | 23 | 30 |
| Potassium | ppm | ASTM D5185(m) | >20 | **2** | 2 | 1 |

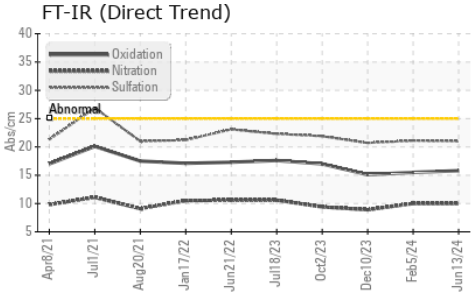
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >4 | **1** | 1.1 | 0.9 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **10.0** | 10.0 | 8.9 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **21.0** | 21.1 | 20.7 |

# OIL ANALYSIS REPORT

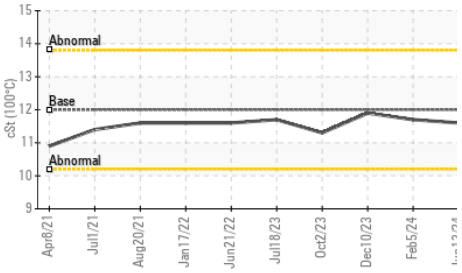
Ferrous Alloys




FT-IR (Direct Trend)




Viscosity @ 100°C



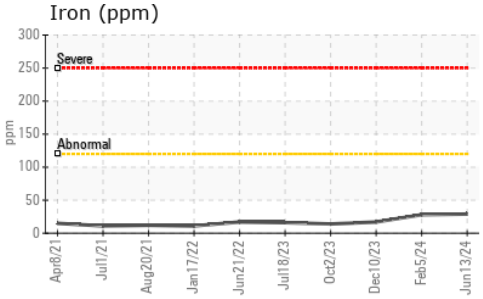

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **15.8** | 15.5 | 15.1 |

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

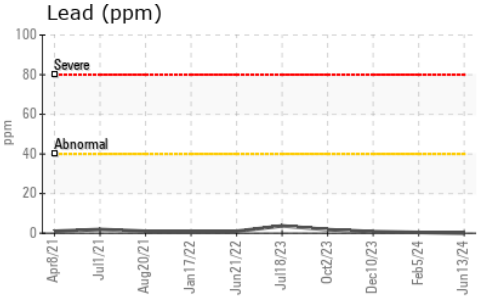
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 12.00 | **11.6** | 11.7 | 11.9 |

## GRAPHS

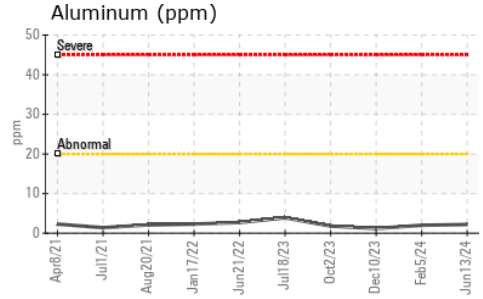
Iron (ppm)



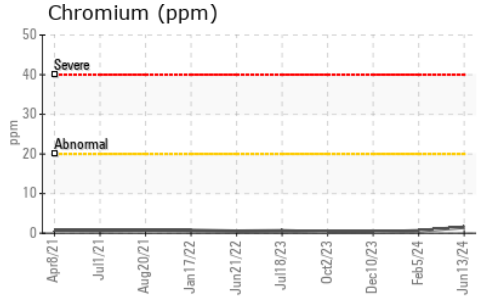

Lead (ppm)



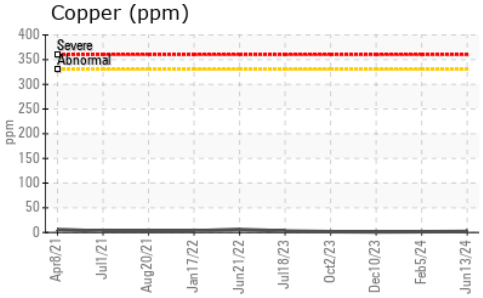

Aluminum (ppm)



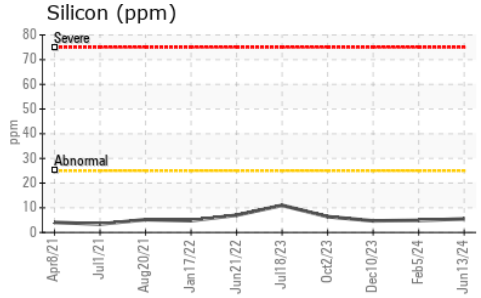

Chromium (ppm)



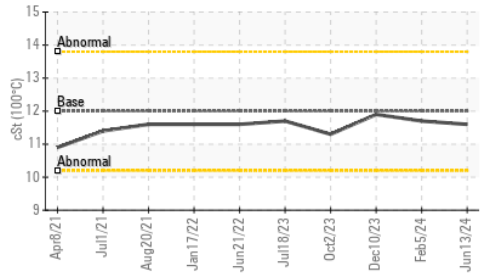

Copper (ppm)



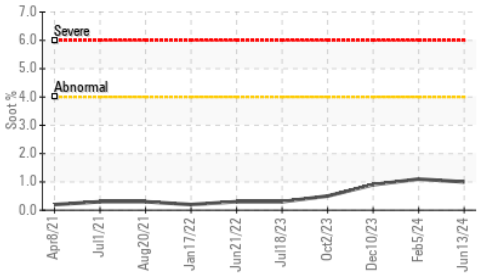

Silicon (ppm)




Viscosity @ 100°C




Soot %




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0119018
**Lab Number** : 02644005
**Unique Number** : 5801544
**Test Package** : MOB 1

**Received** : 25 Jun 2024
**Tested** : 25 Jun 2024
**Diagnosed** : 25 Jun 2024 - Kevin Marson

*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 - 554 - Edmonton SW**
8409 -15th Street NW
Edmonton, AB
CA T6P 0B8
Contact: Tim Greig
tgreig@gflenv.com
T: (780)231-0521
F: