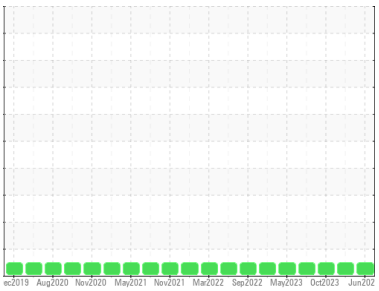
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
**901089**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- LTR)**

## DIAGNOSIS

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

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0112002** | GFL0111992 | GFL0090419 |
| Sample Date | | Client Info | | **27 Jun 2024** | 28 Mar 2024 | 17 Oct 2023 |
| Machine Age | kms | Client Info | | **224667** | 215697 | 200128 |
| Oil Age | kms | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | N/A |
| Sample Status | | | | **NORMAL** | 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 | **7** | 12 | 6 |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **2** | 2 | 1 |
| Lead | ppm | ASTM D5185(m) | >40 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | **<1** | <1 | <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 |

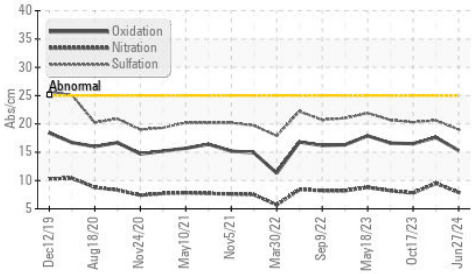
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **2** | 2 | 21 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **58** | 60 | 50 |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **951** | 988 | 816 |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1063** | 1102 | 1420 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **978** | 969 | 1007 |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1200** | 1205 | 1275 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2499** | 2328 | 2506 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **2** | 2 | 3 |
| Sodium | ppm | ASTM D5185(m) | | **2** | 4 | 4 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 1 |

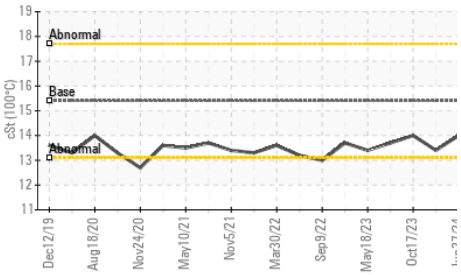
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >4 | **0.3** | 0.4 | 0.2 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **7.9** | 9.5 | 7.8 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **19.0** | 20.6 | 20.3 |

# OIL ANALYSIS REPORT

FT-IR (Direct Trend)




Viscosity @ 100°C



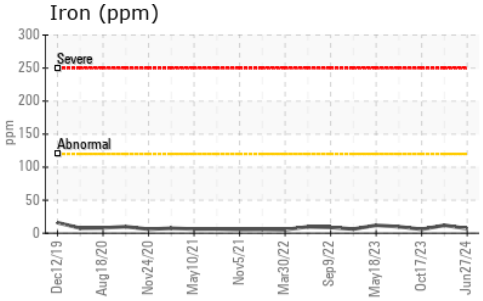

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **15.3** | 17.6 | 16.5 |

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

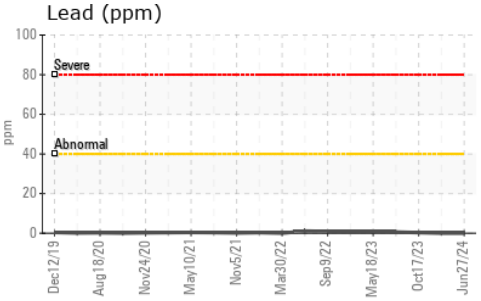
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | **14.0** | 13.4 | 14.0 |

## GRAPHS

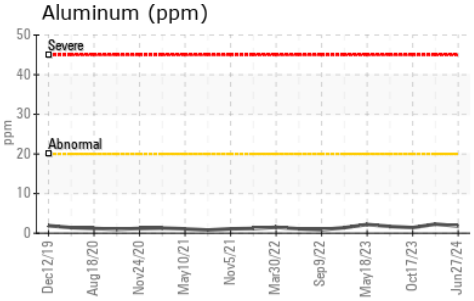
Iron (ppm)



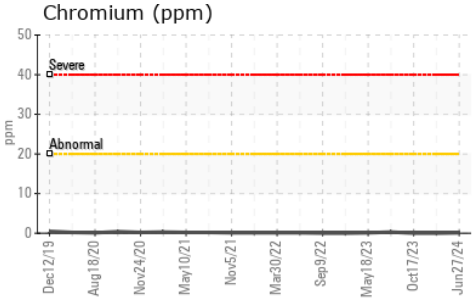

Lead (ppm)



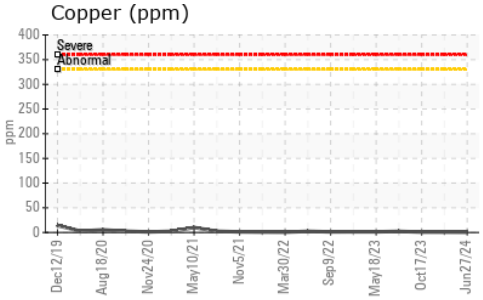

Aluminum (ppm)



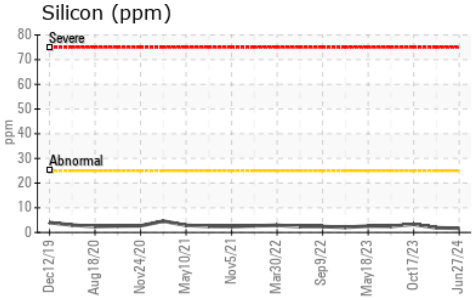

Chromium (ppm)



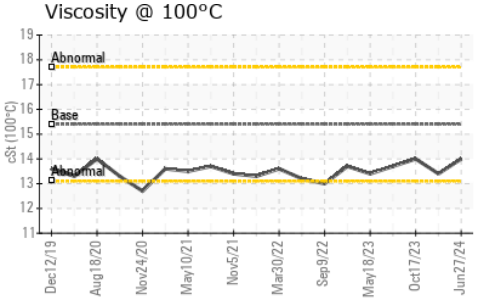

Copper (ppm)



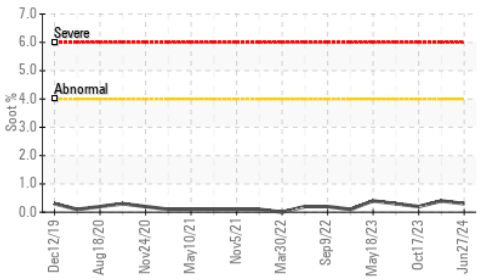

Silicon (ppm)




Viscosity @ 100°C




Soot %




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0112002
**Lab Number** : 02645389
**Unique Number** : 5802928
**Test Package** : MOB 1

**Received** : 04 Jul 2024
**Tested** : 04 Jul 2024
**Diagnosed** : 04 Jul 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.*


**GFL Environmental - 216M**
2475 Beryl Drive
Oakville, ON
CA L6J 7X4
Contact: Matthew Gunness
mgunness@gflenv.com
T:
F: