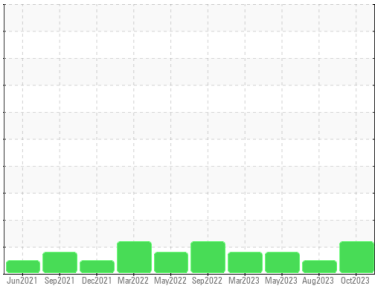
# OIL ANALYSIS REPORT

Sample Rating Trend




**FUEL**

Machine Id
**816003**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- LTR)**

## DIAGNOSIS

**Recommendation**
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

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

**Contamination**
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

**Fluid Condition**
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0085665** | GFL0077299 | GFL0070451 |
| Sample Date | | Client Info | | **25 Oct 2023** | 08 Aug 2023 | 01 May 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **500** | 500 | 500 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **ABNORMAL** | NORMAL | MARGINAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >100 | **19** | 16 | 20 |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >4 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | >3 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **1** | 2 | 3 |
| Lead | ppm | ASTM D5185(m) | >40 | **<1** | 0 | 0 |
| 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 | <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 | **2** | 2 | 2 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **54** | 56 | 57 |
| Manganese | ppm | ASTM D5185(m) | 0 | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **868** | 928 | 926 |
| Calcium | ppm | ASTM D5185(m) | 1070 | **970** | 994 | 1058 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **884** | 1008 | 1055 |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1102** | 1164 | 1159 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2225** | 2364 | 2500 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

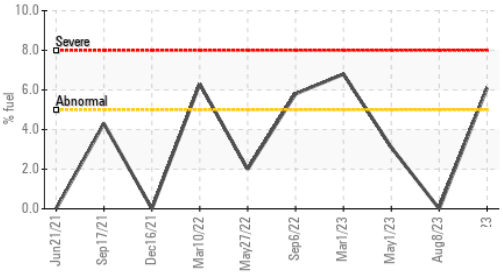
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **4** | 3 | 5 |
| Sodium | ppm | ASTM D5185(m) | | **2** | 2 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | **0** | <1 | 1 |
| Fuel | % | ASTM D7593* | >5 | ▲ **6.1** | <1.0 | ▲ 3.1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **0.4** | 0.5 | 0.4 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **9.7** | 10.6 | 10.5 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **20.8** | 22.2 | 21.3 |

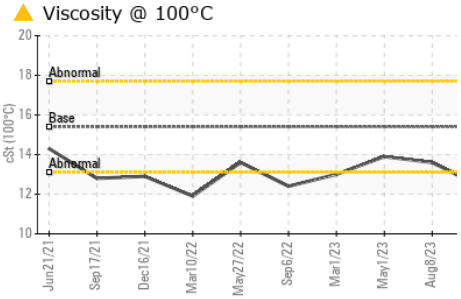
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **17.9** | 19.0 | 19.4 |

# OIL ANALYSIS REPORT

Fuel Dilution




Viscosity @ 100°C

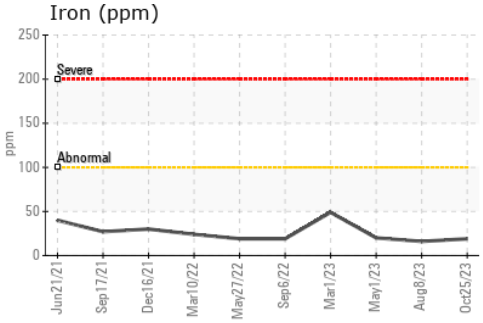



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

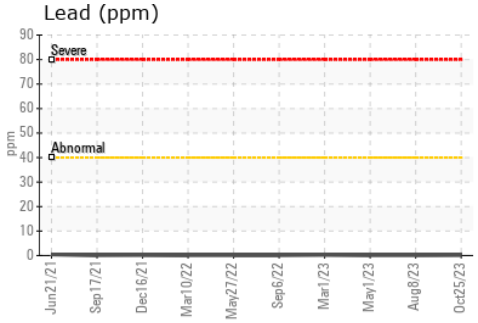
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | ▲ **12.4** | 13.6 | 13.9 |

## GRAPHS

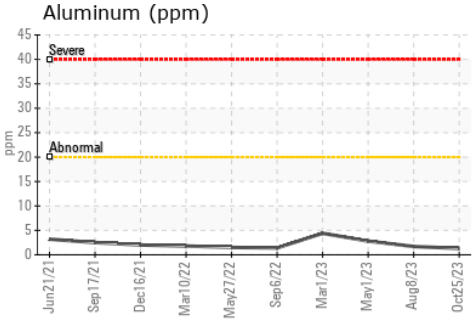
Iron (ppm)



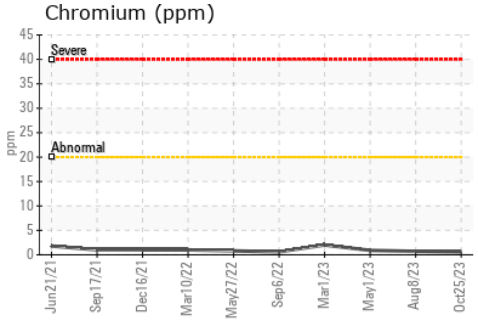

Lead (ppm)



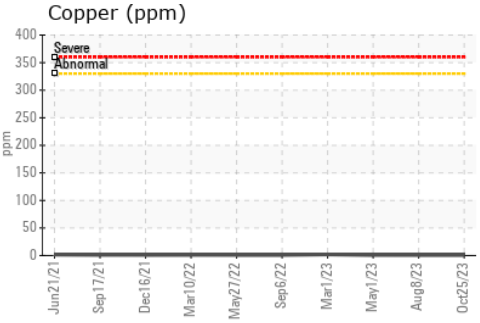

Aluminum (ppm)



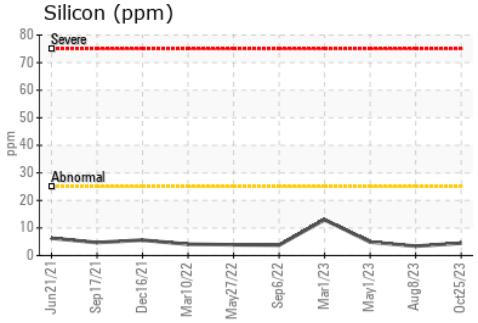

Chromium (ppm)



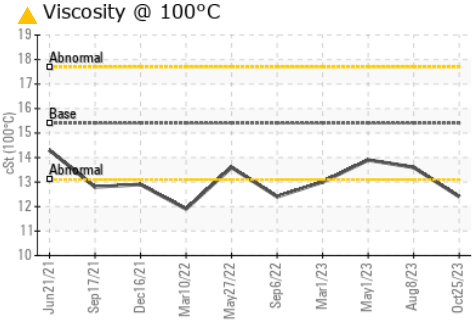

Copper (ppm)



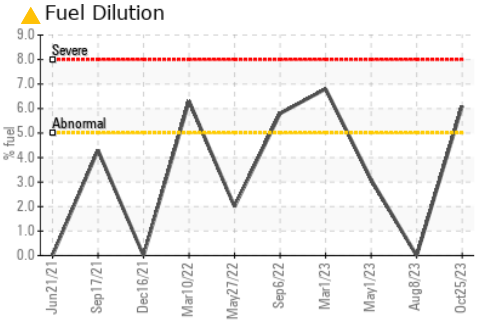

Silicon (ppm)




Viscosity @ 100°C




Fuel Dilution




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0085665
**Lab Number** : 02592351
**Unique Number** : 5669430
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel )

**Received** : 27 Oct 2023
**Diagnosed** : 30 Oct 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.*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