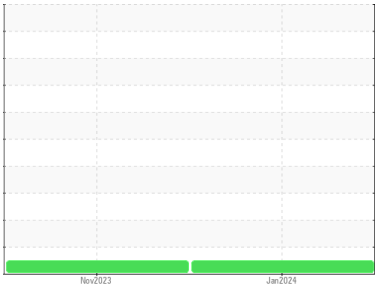
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**(TJY0185)**
Machine Id
**934067**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (--- GAL)**

## DIAGNOSIS

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

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

**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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0103930** | GFL0100526 | --- |
| Sample Date | | Client Info | | **11 Jan 2024** | 04 Nov 2023 | --- |
| Machine Age | hrs | Client Info | | **1184** | 605 | --- |
| Oil Age | hrs | Client Info | | **579** | 605 | --- |
| Oil Changed | | Client Info | | **Changed** | Changed | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **20** | 41 | --- |
| Chromium | ppm | ASTM D5185m | >4 | **1** | <1 | --- |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | --- |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >9 | **39** | 31 | --- |
| Lead | ppm | ASTM D5185m | >30 | **<1** | <1 | --- |
| Copper | ppm | ASTM D5185m | >35 | **3** | 13 | --- |
| Tin | ppm | ASTM D5185m | >4 | **<1** | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **9** | 8 | --- |
| Barium | ppm | ASTM D5185m | 5 | **<1** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 50 | **55** | 50 | --- |
| Manganese | ppm | ASTM D5185m | 0 | **2** | 7 | --- |
| Magnesium | ppm | ASTM D5185m | 560 | **618** | 786 | --- |
| Calcium | ppm | ASTM D5185m | 1510 | **1557** | 1267 | --- |
| Phosphorus | ppm | ASTM D5185m | 780 | **791** | 657 | --- |
| Zinc | ppm | ASTM D5185m | 870 | **1018** | 932 | --- |
| Sulfur | ppm | ASTM D5185m | 2040 | **2518** | 2247 | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **9** | 34 | --- |
| Sodium | ppm | ASTM D5185m | | **7** | 4 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **130** | 120 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0** | 0 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.7** | 11.4 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.0** | 22.6 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.1** | 20.8 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **4.7** | 4.7 | --- |

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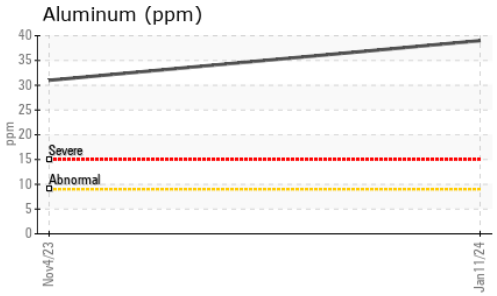
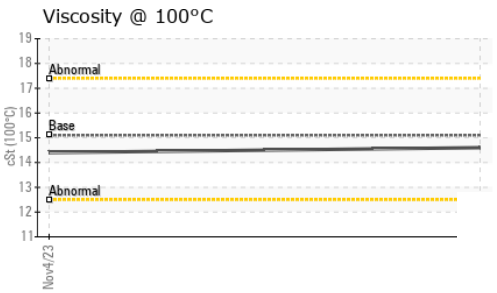
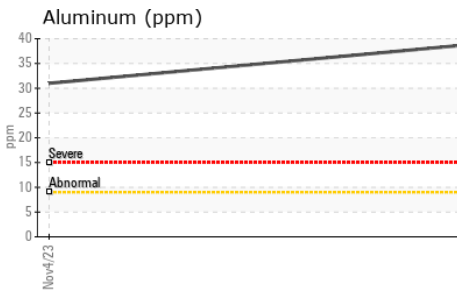


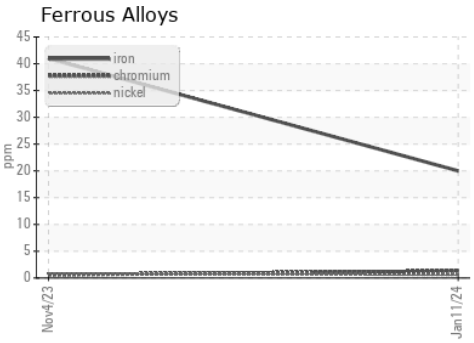



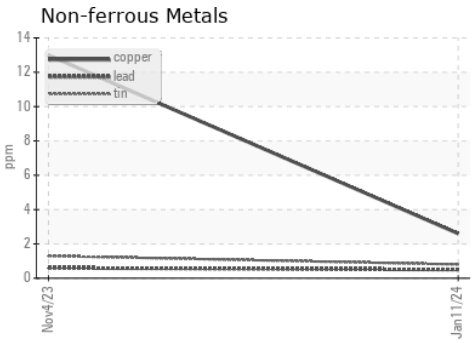



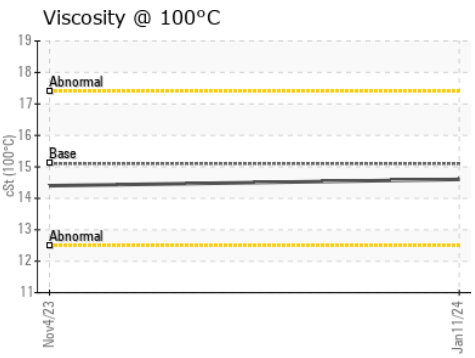

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.1 | **NEG** | NEG | --- |
| Free Water | scalar | *Visual | | **NEG** | NEG | --- |

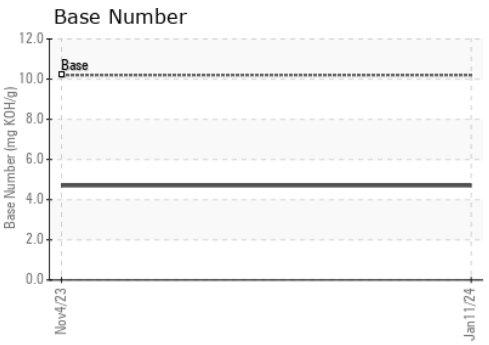
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **14.6** | 14.4 | --- |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0103930
**Lab Number** : 06065292
**Unique Number** : 10836674
**Test Package** : FLEET

**Recieved** : 19 Jan 2024
**Diagnosed** : 20 Jan 2024
**Diagnostician** : Wes Davis

*To discuss this sample report, contact Customer Service at 1-800-237-1369.*
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
*Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)*

**GFL Environmental - 865 - East Mount Hauling**
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T:
F:

Report Id: GFL865 [WUSCAR] 06065292 (Generated: 01/20/2024 04:48:30) Rev: 1

Submitted By: TECHNICIAN ACCOUNT