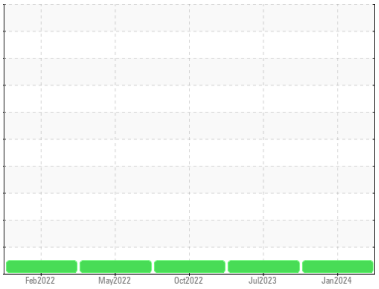
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**4622M**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (36 QTS)**

## 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 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 | | **GFL0109999** | GFL0085030 | GFL0052078 |
| Sample Date | | Client Info | | **11 Jan 2024** | 25 Jul 2023 | 11 Oct 2022 |
| Machine Age | hrs | Client Info | | **21052** | 33495 | 12816 |
| Oil Age | hrs | Client Info | | **600** | 0 | 16253 |
| 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 D5185m | >90 | **27** | 59 | 17 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **6** | 4 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | **1** | 2 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **<1** | 4 | 0 |
| Barium | ppm | ASTM D5185m | 0 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **51** | 67 | 55 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **836** | 1080 | 909 |
| Calcium | ppm | ASTM D5185m | 1070 | **916** | 1182 | 1079 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **923** | 1143 | 945 |
| Zinc | ppm | ASTM D5185m | 1270 | **1133** | 1408 | 1253 |
| Sulfur | ppm | ASTM D5185m | 2060 | **2472** | 3428 | 3128 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **16** | 11 | 4 |
| Sodium | ppm | ASTM D5185m | | **7** | 42 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 8 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >6 | **0.6** | 1 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **18.2** | 12.5 | 11.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **29.5** | 24.7 | 23.7 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **39.8** | 22.9 | 21.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **4.0** | 6.3 | 7.3 |

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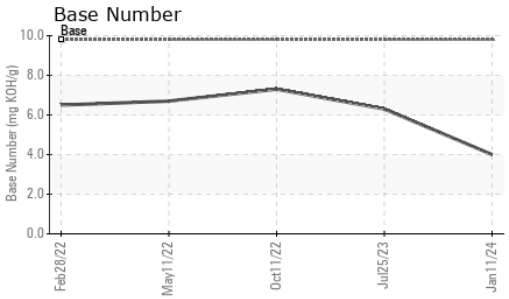
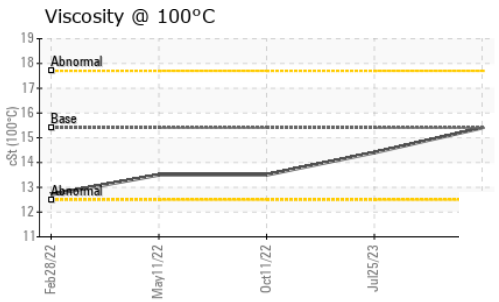
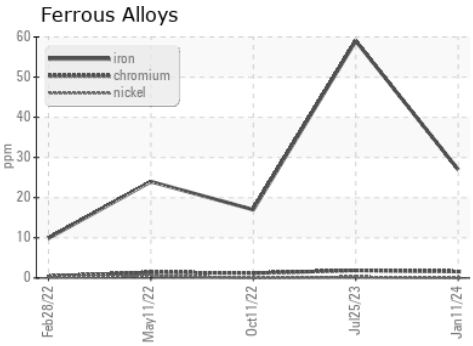


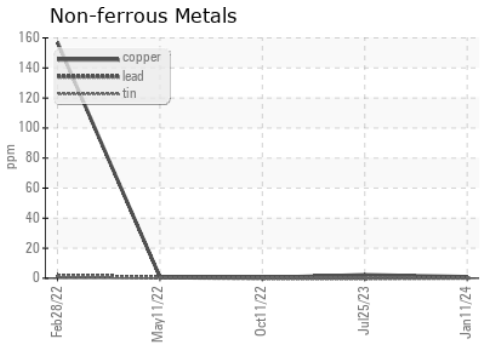



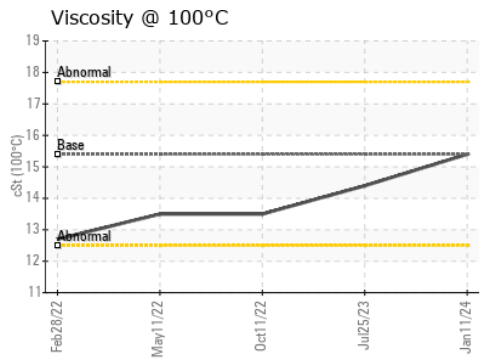

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

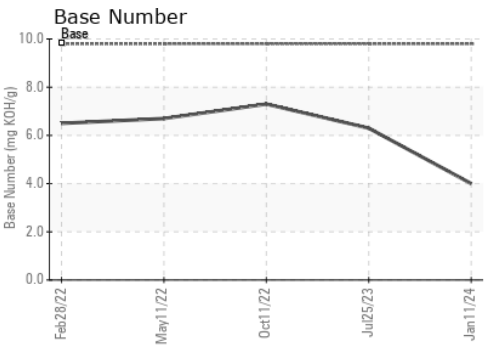
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **15.4** | 14.4 | 13.5 |

## GRAPHS




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0109999
**Lab Number** : 06064811
**Unique Number** : 10836193
**Test Package** : FLEET

**Recieved** : 18 Jan 2024
**Diagnosed** : 21 Jan 2024
**Diagnostician** : Don Baldridge

Certificate L2367

*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 - 410 - Michigan West**
39000 Van Born Rd
Wayne, MI
US 48184
Contact: Belal Dgheish
bdgheish@gflenv.com
T: (734)714-2340
F: