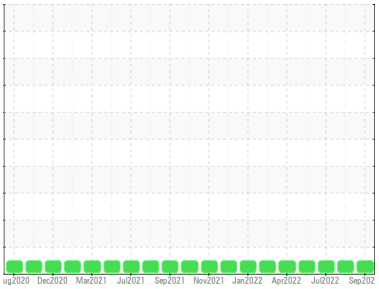
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
**830010**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**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 | | **GFL0050904** | GFL0069710 | GFL0050817 |
| Sample Date | | Client Info | | **01 Sep 2023** | 19 May 2023 | 04 Jul 2022 |
| Machine Age | hrs | Client Info | | **8026** | 7319 | 4771 |
| Oil Age | hrs | Client Info | | **707** | 7319 | 312 |
| Oil Changed | | Client Info | | **Changed** | Changed | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **13** | 9 | 7 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **2** | 0 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **4** | 2 | 1 |
| Copper | ppm | ASTM D5185m | >330 | **1** | 1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **7** | 8 | 19 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **66** | 57 | 50 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 560 | **698** | 640 | 554 |
| Calcium | ppm | ASTM D5185m | 1510 | **1770** | 1653 | 1710 |
| Phosphorus | ppm | ASTM D5185m | 780 | **855** | 765 | 739 |
| Zinc | ppm | ASTM D5185m | 870 | **1104** | 1063 | 968 |
| Sulfur | ppm | ASTM D5185m | 2040 | **3013** | 2828 | 2928 |

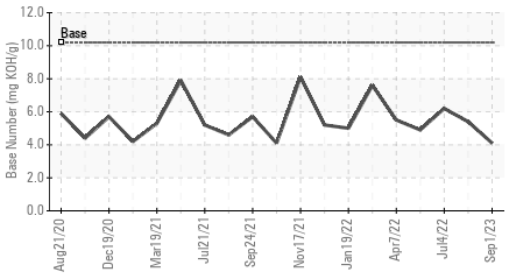
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 4 | 4 |
| Sodium | ppm | ASTM D5185m | | **9** | 7 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 2 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0** | 0 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.9** | 11.4 | 10.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **23.5** | 20.1 | 20.1 |

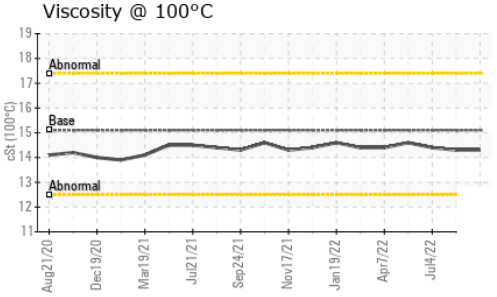
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.7** | 16.5 | 17.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **4.1** | 5.4 | 6.2 |

# OIL ANALYSIS REPORT

Base Number




Viscosity @ 100°C

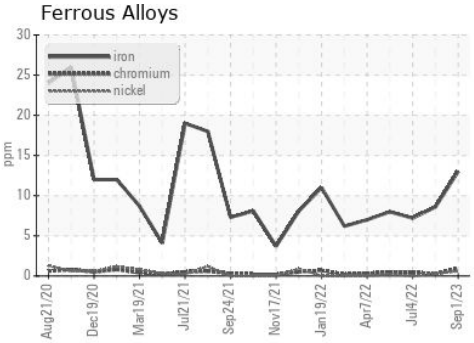



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

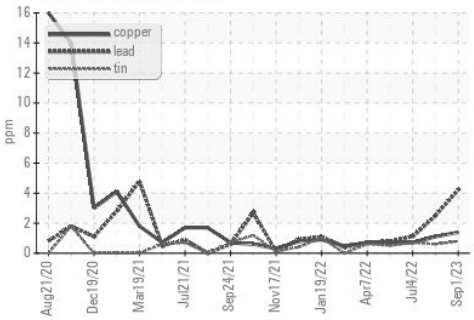
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **14.3** | 14.3 | 14.4 |

## GRAPHS

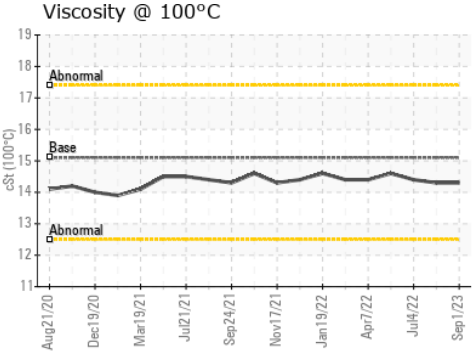
Ferrous Alloys



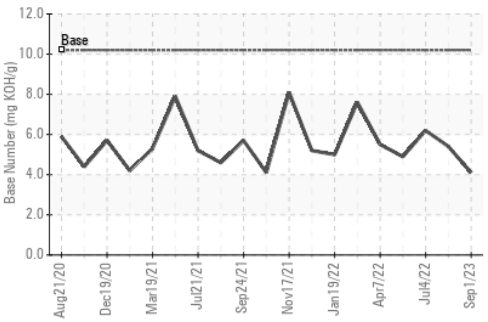

Non-ferrous Metals




Viscosity @ 100°C




Base Number




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0050904
**Lab Number** : 05941761
**Unique Number** : 10632373
**Test Package** : FLEET

**Received** : 05 Sep 2023
**Diagnosed** : 05 Sep 2023
**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)*

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