



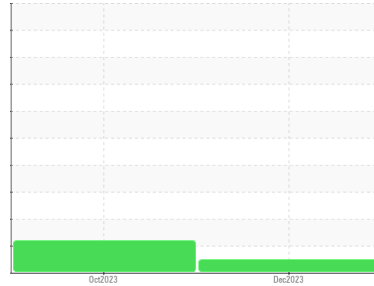
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**834053**  
 Component  
**Natural Gas Engine**  
 Fluid  
**PETRO CANADA DURON GEO LD 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

Metal levels are typical for a new component breaking in.

### 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 |             | <b>GFL0099949</b>  | GFL0095142  | ---      |
| Sample Date   | Client Info |             | <b>04 Dec 2023</b> | 11 Oct 2023 | ---      |
| Machine Age   | hrs         | Client Info | <b>599</b>         | 310         | ---      |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | ---      |
| Oil Changed   | Client Info |             | <b>Not Chngd</b>   | Not Chngd   | ---      |
| Sample Status |             |             | <b>NORMAL</b>      | ABNORMAL    | ---      |

## CONTAMINATION

|       | method    | limit/base | current    | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.1       | <b>NEG</b> | NEG      | ---      |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >50  | <b>66</b>    | 14       | ---      |
| Chromium | ppm    | ASTM D5185m >5   | <b>&lt;1</b> | 2        | ---      |
| Nickel   | ppm    | ASTM D5185m >4   | <b>1</b>     | <1       | ---      |
| Titanium | ppm    | ASTM D5185m >5   | <b>&lt;1</b> | <1       | ---      |
| Silver   | ppm    | ASTM D5185m >3   | <b>0</b>     | 0        | ---      |
| Aluminum | ppm    | ASTM D5185m >25  | <b>6</b>     | 2        | ---      |
| Lead     | ppm    | ASTM D5185m >40  | <b>2</b>     | 5        | ---      |
| Copper   | ppm    | ASTM D5185m >150 | <b>19</b>    | 2        | ---      |
| Tin      | ppm    | ASTM D5185m >4   | <b>2</b>     | <1       | ---      |
| Vanadium | ppm    | ASTM D5185m      | <b>&lt;1</b> | <1       | ---      |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | ---      |

## ADDITIVES

|            | method | limit/base       | current     | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 50   | <b>6</b>    | 7        | ---      |
| Barium     | ppm    | ASTM D5185m 5    | <b>0</b>    | 0        | ---      |
| Molybdenum | ppm    | ASTM D5185m 50   | <b>54</b>   | 59       | ---      |
| Manganese  | ppm    | ASTM D5185m 0    | <b>13</b>   | <1       | ---      |
| Magnesium  | ppm    | ASTM D5185m 560  | <b>847</b>  | 575      | ---      |
| Calcium    | ppm    | ASTM D5185m 1510 | <b>1308</b> | 1676     | ---      |
| Phosphorus | ppm    | ASTM D5185m 780  | <b>751</b>  | 711      | ---      |
| Zinc       | ppm    | ASTM D5185m 870  | <b>965</b>  | 942      | ---      |
| Sulfur     | ppm    | ASTM D5185m 2040 | <b>2351</b> | 2303     | ---      |

## CONTAMINANTS

|           | method | limit/base      | current   | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>36</b> | 5        | ---      |
| Sodium    | ppm    | ASTM D5185m     | <b>4</b>  | 16       | ---      |
| Potassium | ppm    | ASTM D5185m >20 | <b>7</b>  | 0        | ---      |

## INFRA-RED

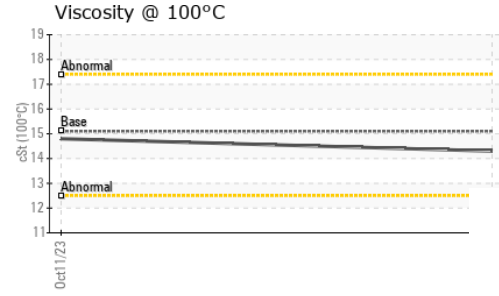
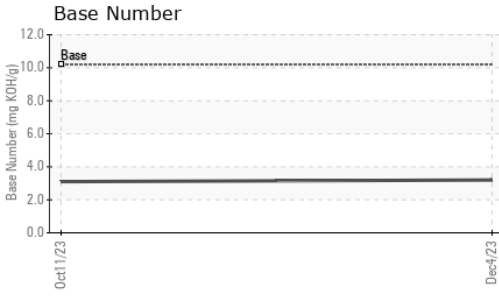
|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844     | <b>0</b>    | 0        | ---      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>12.5</b> | 11.3     | ---      |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>24.0</b> | 24.3     | ---      |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>22.6</b> | 20.1     | ---      |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.2 | <b>3.2</b>  | ▲ 3.1    | ---      |



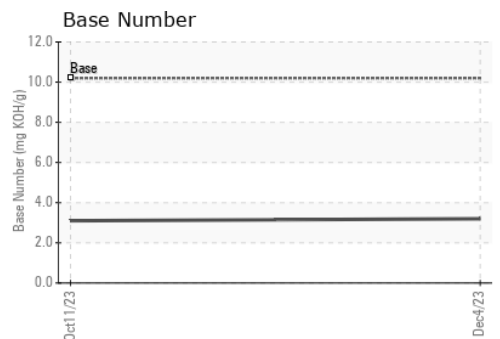
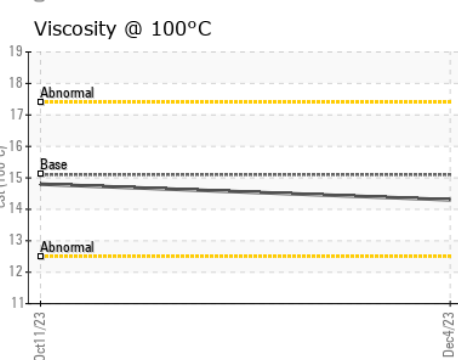
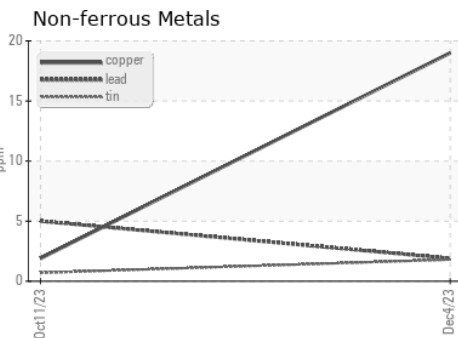
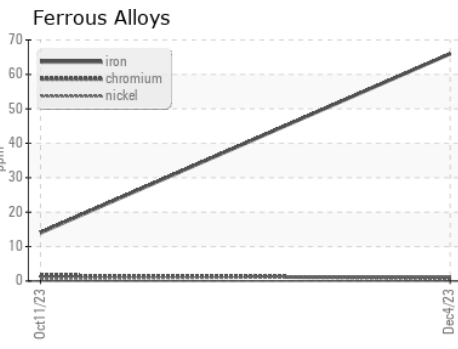
# OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |     |
|------------------|--------|------------|---------|-------------|----------|-----|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.1    | <b>14.3</b> | 14.8     | --- |

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0099949 **Received** : 07 Dec 2023  
**Lab Number** : **06027560** **Diagnosed** : 08 Dec 2023  
**Unique Number** : 10777351 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 836 - Kansas City Hauling**  
 7801 East Truman Road  
 Kansas City, MO  
 US 64126  
 Contact: Robert Hart  
 rhart@gflenv.com  
 T: (580)461-1509  
 F:

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)