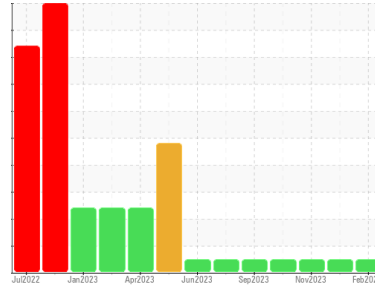




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**728044-362000**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## 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 | <b>GFL0104964</b>  | GFL0088132    | GFL0088204  |        |
| Sample Date   | Client Info | <b>01 Feb 2024</b> | 10 Jan 2024   | 02 Nov 2023 |        |
| Machine Age   | mls         | Client Info        | <b>233585</b> | 232106      | 226482 |
| Oil Age       | mls         | Client Info        | <b>0</b>      | 0           | 0      |
| Oil Changed   | Client Info | <b>Not Changed</b> | Changed       | Not Changed |        |
| Sample Status |             | <b>NORMAL</b>      | NORMAL        | NORMAL      |        |

## CONTAMINATION

| method | limit/base     | current        | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel   | WC Method >5   | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water  | WC Method >0.2 | <b>NEG</b>     | NEG      | NEG      |
| Glycol | WC Method      | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

| method   | limit/base           | current      | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron     | ppm ASTM D5185m >100 | <b>15</b>    | 25       | 7        |
| Chromium | ppm ASTM D5185m >20  | <b>&lt;1</b> | <1       | 0        |
| Nickel   | ppm ASTM D5185m >4   | <b>0</b>     | 0        | 0        |
| Titanium | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Silver   | ppm ASTM D5185m >3   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm ASTM D5185m >20  | <b>2</b>     | 3        | 1        |
| Lead     | ppm ASTM D5185m >40  | <b>5</b>     | <1       | 0        |
| Copper   | ppm ASTM D5185m >330 | <b>2</b>     | 1        | <1       |
| Tin      | ppm ASTM D5185m >15  | <b>&lt;1</b> | <1       | 0        |
| Vanadium | ppm ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |
| Cadmium  | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

| method     | limit/base           | current      | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron      | ppm ASTM D5185m 0    | <b>7</b>     | 30       | 26       |
| Barium     | ppm ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm ASTM D5185m 60   | <b>59</b>    | 49       | 52       |
| Manganese  | ppm ASTM D5185m 0    | <b>&lt;1</b> | <1       | 0        |
| Magnesium  | ppm ASTM D5185m 1010 | <b>867</b>   | 745      | 859      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1025</b>  | 1311     | 1321     |
| Phosphorus | ppm ASTM D5185m 1150 | <b>950</b>   | 1027     | 1164     |
| Zinc       | ppm ASTM D5185m 1270 | <b>1158</b>  | 1271     | 1468     |
| Sulfur     | ppm ASTM D5185m 2060 | <b>2905</b>  | 3247     | 3694     |

## CONTAMINANTS

| method    | limit/base          | current   | history1 | history2 |
|-----------|---------------------|-----------|----------|----------|
| Silicon   | ppm ASTM D5185m >25 | <b>3</b>  | 4        | 3        |
| Sodium    | ppm ASTM D5185m     | <b>24</b> | 57       | 26       |
| Potassium | ppm ASTM D5185m >20 | <b>8</b>  | 26       | 10       |

## INFRA-RED

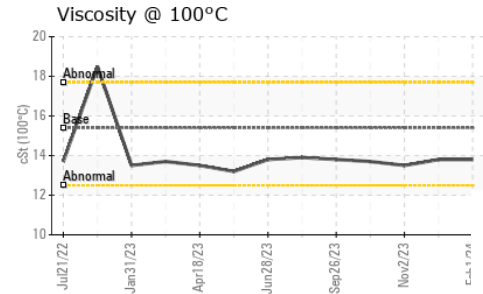
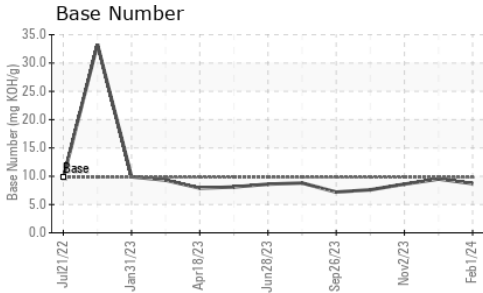
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >3         | <b>0.4</b>  | 0.7      | 0.3      |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>7.6</b>  | 10.3     | 6.3      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>20.6</b> | 19.8     | 18.5     |

## FLUID DEGRADATION

| method           | limit/base               | current     | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>17.1</b> | 17.2     | 14.2     |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>8.7</b>  | 9.5      | 8.6      |



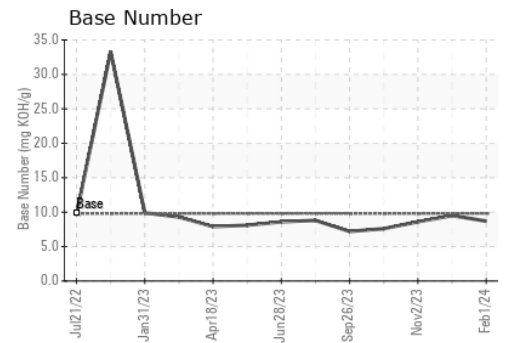
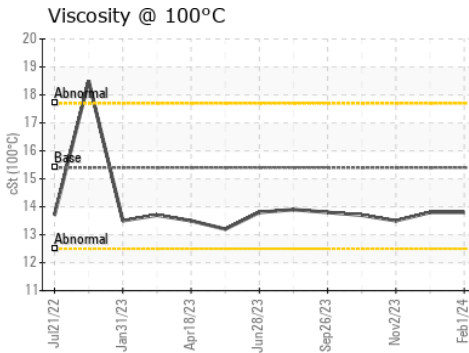
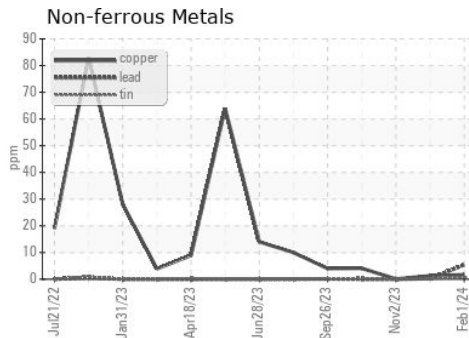
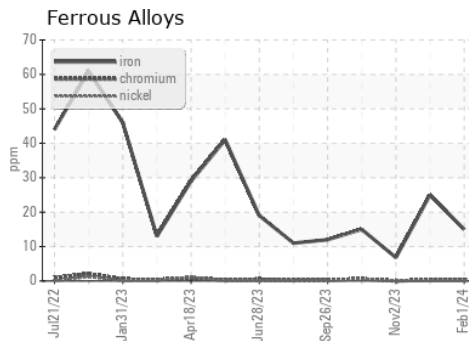
# OIL ANALYSIS REPORT



| 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    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |      |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.4    | <b>13.8</b> | 13.8     | 13.5 |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0104964  
**Lab Number** : **06097508**  
**Unique Number** : 10890361  
**Test Package** : FLEET

**Received** : 22 Feb 2024  
**Tested** : 23 Feb 2024  
**Diagnosed** : 23 Feb 2024 - Wes Davis

**GFL Environmental - 820 - Joplin Hauling**  
 3700 West 7th Street  
 Joplin, MO  
 US 64801

Contact: James Jarrett  
 jjarrett@gflenv.com  
 T: (417)310-2802

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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