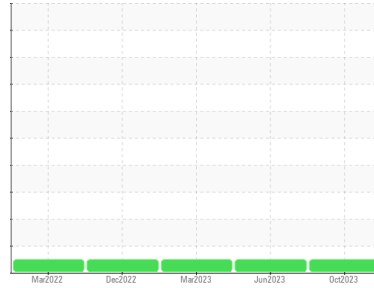




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**921046-260380**

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>GFL0093721</b>  | GFL0078565  | GFL0078577  |
| Sample Date   | Client Info | <b>09 Oct 2023</b> | 15 Jun 2023 | 27 Mar 2023 |
| Machine Age   | hrs         | <b>6693</b>        | 5892        | 5533        |
| Oil Age       | hrs         | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info | <b>Not Changed</b> | Changed     | 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     |
| Glycol | WC Method    | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

| method   | limit/base           | current      | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron     | ppm ASTM D5185m >100 | <b>3</b>     | 10       | 19       |
| Chromium | ppm ASTM D5185m >20  | <b>&lt;1</b> | <1       | 2        |
| Nickel   | ppm ASTM D5185m >4   | <b>0</b>     | 0        | 0        |
| Titanium | ppm ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |
| Silver   | ppm ASTM D5185m >3   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm ASTM D5185m >20  | <b>2</b>     | 1        | 4        |
| Lead     | ppm ASTM D5185m >40  | <b>0</b>     | <1       | 0        |
| Copper   | ppm ASTM D5185m >330 | <b>&lt;1</b> | 0        | <1       |
| Tin      | ppm ASTM D5185m >15  | <b>&lt;1</b> | 0        | <1       |
| Vanadium | ppm ASTM D5185m      | <b>&lt;1</b> | 0        | 1        |
| Cadmium  | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

| method     | limit/base           | current      | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron      | ppm ASTM D5185m 0    | <b>2</b>     | <1       | <1       |
| Barium     | ppm ASTM D5185m 0    | <b>12</b>    | 0        | 0        |
| Molybdenum | ppm ASTM D5185m 60   | <b>58</b>    | 61       | 56       |
| Manganese  | ppm ASTM D5185m 0    | <b>&lt;1</b> | <1       | 1        |
| Magnesium  | ppm ASTM D5185m 1010 | <b>941</b>   | 1002     | 919      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1020</b>  | 1089     | 988      |
| Phosphorus | ppm ASTM D5185m 1150 | <b>1002</b>  | 1055     | 924      |
| Zinc       | ppm ASTM D5185m 1270 | <b>1212</b>  | 1319     | 1219     |
| Sulfur     | ppm ASTM D5185m 2060 | <b>3054</b>  | 3778     | 3074     |

## CONTAMINANTS

| method    | limit/base          | current  | history1 | history2 |
|-----------|---------------------|----------|----------|----------|
| Silicon   | ppm ASTM D5185m >25 | <b>3</b> | 2        | 4        |
| Sodium    | ppm ASTM D5185m     | <b>3</b> | 2        | 6        |
| Potassium | ppm ASTM D5185m >20 | <b>5</b> | 1        | 4        |

## INFRA-RED

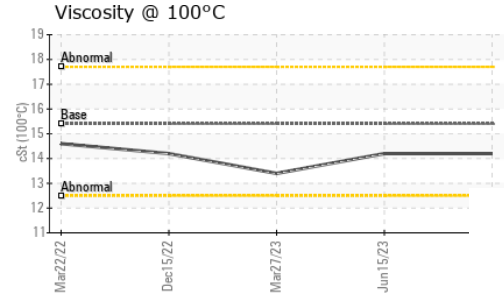
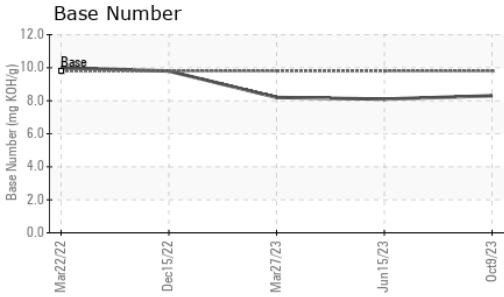
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >3         | <b>0.3</b>  | 0.5      | 1        |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>5.1</b>  | 7.0      | 8.5      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>17.4</b> | 19.8     | 20.7     |

## FLUID DEGRADATION

| method           | limit/base               | current     | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>12.7</b> | 15.8     | 15.2     |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>8.3</b>  | 8.1      | 8.2      |



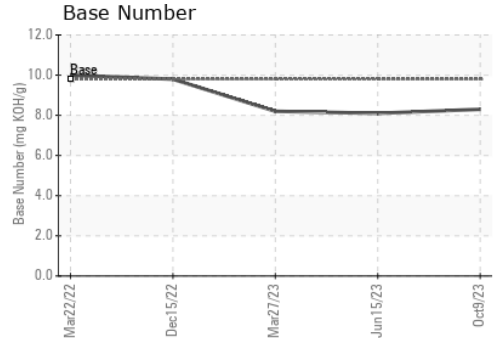
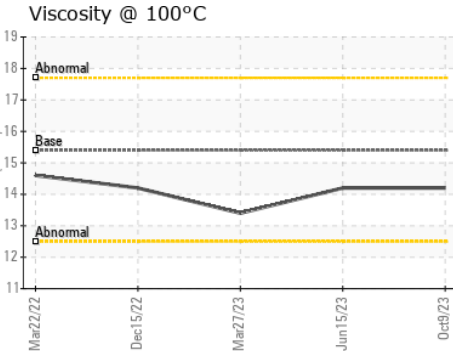
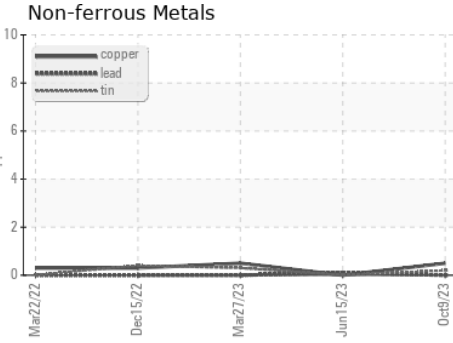
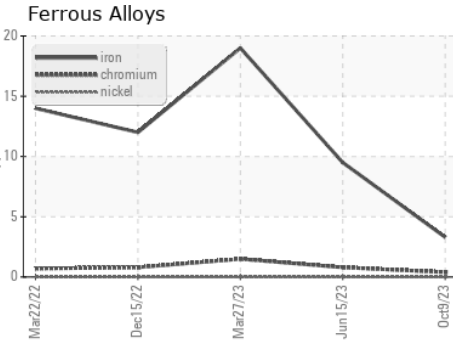
# OIL ANALYSIS REPORT



| 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>14.2</b> | 14.2     | 13.4 |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0093721 **Received** : 13 Oct 2023  
**Lab Number** : **05978675** **Diagnosed** : 16 Oct 2023  
**Unique Number** : 10695970 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 837 - Harrison TS**  
 22820 S State Route 291  
 Harrisonville, MO  
 US 64701  
 Contact: BRYAN SWANSON  
 bryanswanson@gflenv.com  
 T:  
 F:

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)