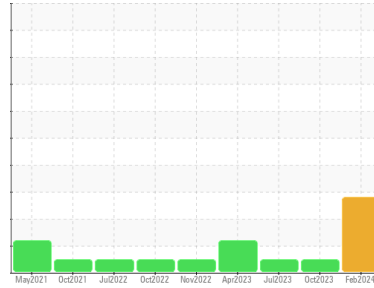




# OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id  
**925036-142557**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (8 GAL)**

## DIAGNOSIS

**Recommendation**  
 Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 Elemental level of silicon (Si) above normal.

**Fluid Condition**  
 The BN level is low. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

| method        | limit/base  | current            | history1    | history2    |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | <b>GFL0110810</b>  | GFL0073221  | GFL0088465  |
| Sample Date   | Client Info | <b>21 Feb 2024</b> | 24 Oct 2023 | 12 Jul 2023 |
| Machine Age   | hrs         | <b>22016</b>       | 21453       | 20827       |
| Oil Age       | hrs         | <b>600</b>         | 650         | 650         |
| Oil Changed   | Client Info | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             | <b>ABNORMAL</b>    | NORMAL      | NORMAL      |

## CONTAMINATION

| method | limit/base     | current        | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel   | WC Method >3.0 | <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 >120 | <b>23</b>    | 5        | 11       |
| Chromium | ppm ASTM D5185m >20  | <b>2</b>     | <1       | 1        |
| Nickel   | ppm ASTM D5185m >5   | <b>&lt;1</b> | 0        | <1       |
| Titanium | ppm ASTM D5185m >2   | <b>&lt;1</b> | <1       | 0        |
| Silver   | ppm ASTM D5185m >2   | <b>0</b>     | 0        | <1       |
| Aluminum | ppm ASTM D5185m >20  | <b>3</b>     | 1        | 2        |
| Lead     | ppm ASTM D5185m >40  | <b>&lt;1</b> | 0        | <1       |
| Copper   | ppm ASTM D5185m >330 | <b>2</b>     | 2        | 3        |
| Tin      | ppm ASTM D5185m >15  | <b>0</b>     | 0        | 1        |
| Vanadium | ppm ASTM D5185m      | <b>0</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>9</b>     | 47       | 34       |
| Barium     | ppm ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm ASTM D5185m 60   | <b>56</b>    | 55       | 61       |
| Manganese  | ppm ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm ASTM D5185m 1010 | <b>489</b>   | 502      | 575      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1516</b>  | 1423     | 1528     |
| Phosphorus | ppm ASTM D5185m 1150 | <b>629</b>   | 682      | 717      |
| Zinc       | ppm ASTM D5185m 1270 | <b>839</b>   | 883      | 973      |
| Sulfur     | ppm ASTM D5185m 2060 | <b>2026</b>  | 2220     | 2911     |

## CONTAMINANTS

| method    | limit/base          | current     | history1 | history2 |
|-----------|---------------------|-------------|----------|----------|
| Silicon   | ppm ASTM D5185m >25 | <b>▲ 26</b> | 6        | 4        |
| Sodium    | ppm ASTM D5185m     | <b>12</b>   | 2        | 6        |
| Potassium | ppm ASTM D5185m >20 | <b>0</b>    | <1       | 2        |

## INFRA-RED

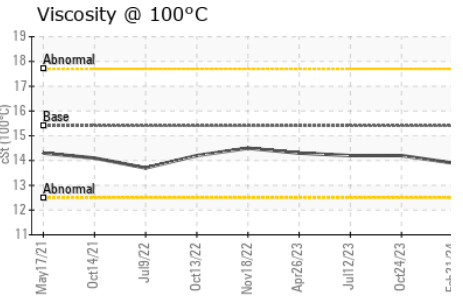
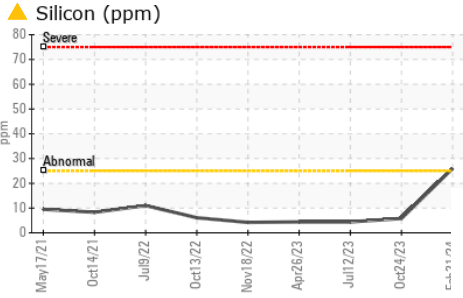
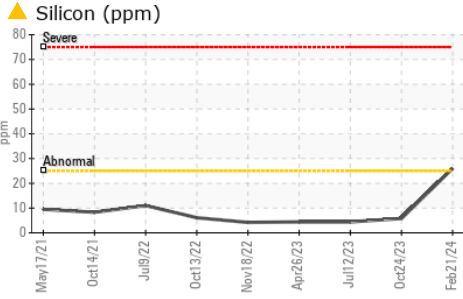
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >4         | <b>0.1</b>  | 0        | 0        |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>10.7</b> | 6.8      | 9.8      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>20.9</b> | 18.3     | 19.5     |

## FLUID DEGRADATION

| method           | limit/base               | current      | history1 | history2 |
|------------------|--------------------------|--------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>17.7</b>  | 14.3     | 16.5     |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>▲ 3.0</b> | 7.3      | 5.3      |



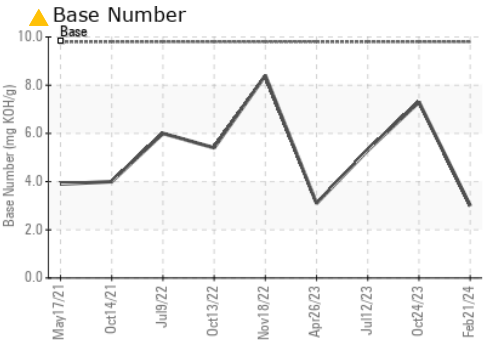
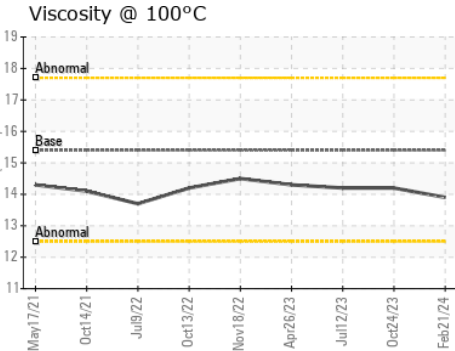
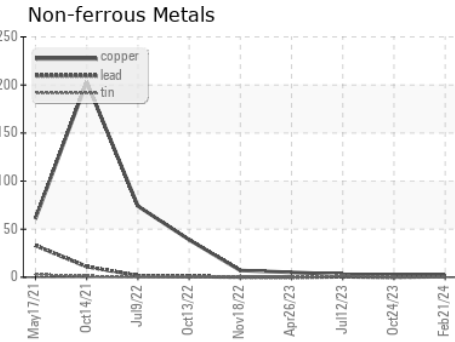
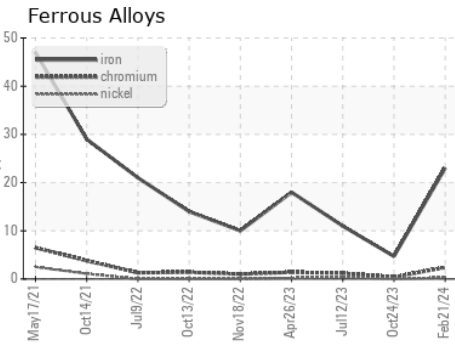
# OIL ANALYSIS REPORT



| 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    | 13.9     | 14.2     |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0110810  
**Lab Number** : 06099843  
**Unique Number** : 10898073  
**Test Package** : FLEET

**Received** : 26 Feb 2024  
**Tested** : 27 Feb 2024  
**Diagnosed** : 27 Feb 2024 - Don Baldrige

**GFL Environmental - 146 - Augusta**  
 1064 Franke Industrial  
 Augusta, GA  
 US 30909  
 Contact: JEFFERY WASHINGTON  
 jeff.washington@gflenv.com

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)

T:  
F: