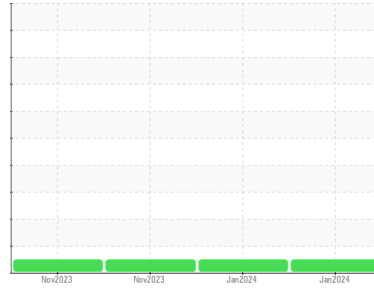




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**(BB29494)**

Machine Id  
**370M**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (36 QTS)**

## 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>GFL0110048</b>  | GFL0110015  | GFL0059242  |
| Sample Date        | Client Info |             |            | <b>27 Jan 2024</b> | 11 Jan 2024 | 15 Nov 2023 |
| Machine Age        | hrs         | Client Info |            | <b>17563</b>       | 17421       | 17122       |
| Oil Age            | hrs         | Client Info |            | <b>600</b>         | 600         | 17122       |
| Oil Changed        | Client Info |             |            | <b>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>    | 17       | 25       |
| Chromium    | ppm | ASTM D5185m | >20        | <b>&lt;1</b> | <1       | 1        |
| Nickel      | ppm | ASTM D5185m | >4         | <b>0</b>     | 0        | <1       |
| 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>6</b>     | 7        | 4        |
| Lead        | ppm | ASTM D5185m | >40        | <b>&lt;1</b> | 0        | 3        |
| Copper      | ppm | ASTM D5185m | >330       | <b>2</b>     | 0        | 0        |
| Tin         | ppm | ASTM D5185m | >15        | <b>&lt;1</b> | <1       | <1       |
| 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>&lt;1</b> | 2        | 3        |
| Barium     | ppm | ASTM D5185m | 0          | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm | ASTM D5185m | 60         | <b>49</b>    | 55       | 61       |
| Manganese  | ppm | ASTM D5185m | 0          | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm | ASTM D5185m | 1010       | <b>840</b>   | 882      | 986      |
| Calcium    | ppm | ASTM D5185m | 1070       | <b>904</b>   | 960      | 1117     |
| Phosphorus | ppm | ASTM D5185m | 1150       | <b>933</b>   | 1050     | 1101     |
| Zinc       | ppm | ASTM D5185m | 1270       | <b>1118</b>  | 1222     | 1347     |
| Sulfur     | ppm | ASTM D5185m | 2060       | <b>2582</b>  | 2977     | 3067     |

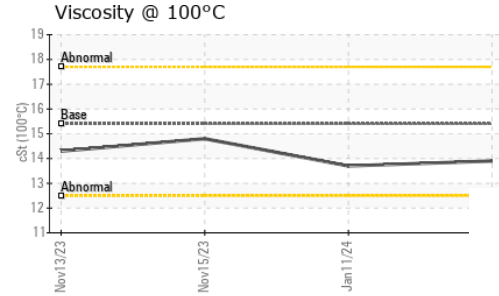
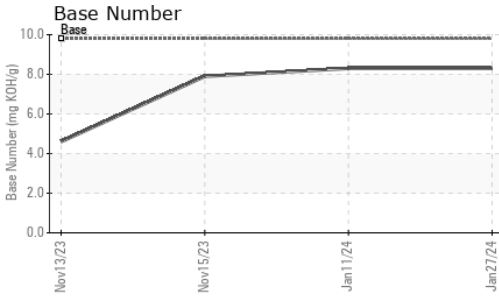
| CONTAMINANTS |     | method      | limit/base | current   | history1 | history2 |
|--------------|-----|-------------|------------|-----------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>6</b>  | 6        | 7        |
| Sodium       | ppm | ASTM D5185m |            | <b>10</b> | 2        | 2        |
| Potassium    | ppm | ASTM D5185m | >20        | <b>3</b>  | 2        | <1       |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 | >3         | <b>0.6</b>  | 0.7      | 0.4      |
| Nitration | Abs/cm   | *ASTM D7624 | >20        | <b>8.2</b>  | 8.6      | 9.7      |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30        | <b>19.4</b> | 20.0     | 21.0     |

| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm | *ASTM D7414 | >25        | <b>15.7</b> | 15.7     | 18.9     |
| Base Number (BN)  | mg KOH/g | ASTM D2896  | 9.8        | <b>8.3</b>  | 8.3      | 7.9      |



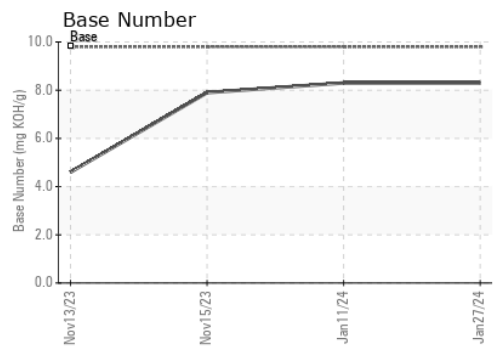
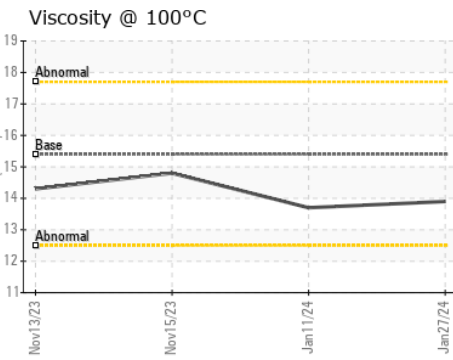
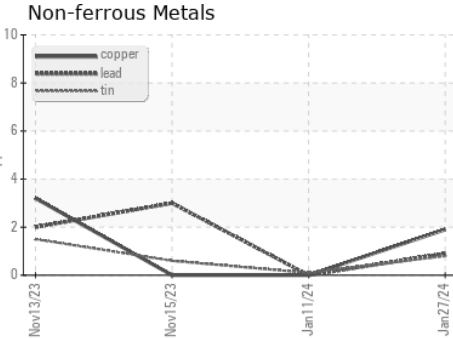
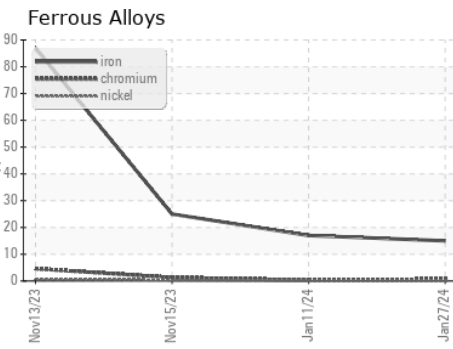
# OIL ANALYSIS REPORT



| 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>13.9</b> | 13.7     | 14.8 |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0110048 **Recieved** : 01 Feb 2024  
**Lab Number** : **06076543** **Diagnosed** : 01 Feb 2024  
**Unique Number** : 10858634 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 410 - Michigan West**  
 39000 Van Born Rd  
 Wayne, MI  
 US 48184  
 Contact: Belal Dgheish  
 bdgheish@gflenv.com  
 T: (734)714-2340  
 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)