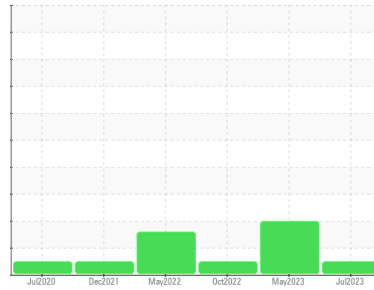




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**OR348**  
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 condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>GFL0087394</b>  | GFL0056459  | GFL0056436  |
| Sample Date   | Client Info |             | <b>18 Jul 2023</b> | 29 May 2023 | 28 Oct 2022 |
| Machine Age   | hrs         | Client Info | <b>22210</b>       | 21984       | 21186       |
| Oil Age       | hrs         | Client Info | <b>226</b>         | 798         | 1331        |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | ABNORMAL    | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >2.1       | <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 D5185(m) | >51     | <b>28</b>    | ▲ 109    | 41 |
| Chromium  | ppm    | ASTM D5185(m) | >11     | <b>&lt;1</b> | 2        | <1 |
| Nickel    | ppm    | ASTM D5185(m) | >5      | <b>&lt;1</b> | 2        | <1 |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | <1       | <1 |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>0</b>     | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >31     | <b>2</b>     | 7        | 3  |
| Lead      | ppm    | ASTM D5185(m) | >26     | <b>&lt;1</b> | 4        | <1 |
| Copper    | ppm    | ASTM D5185(m) | >26     | <b>1</b>     | 5        | 2  |
| Tin       | ppm    | ASTM D5185(m) | >4      | <b>0</b>     | 0        | <1 |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |      |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron      | ppm    | ASTM D5185(m) | 0       | <b>2</b>     | 2        | 1    |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 60      | <b>62</b>    | 78       | 66   |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | <1       | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 1010    | <b>1022</b>  | 1196     | 1048 |
| Calcium    | ppm    | ASTM D5185(m) | 1070    | <b>1101</b>  | 1334     | 1169 |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>1096</b>  | 1299     | 1129 |
| Zinc       | ppm    | ASTM D5185(m) | 1270    | <b>1219</b>  | 1430     | 1279 |
| Sulfur     | ppm    | ASTM D5185(m) | 2060    | <b>2575</b>  | 2673     | 2595 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

|           | method | limit/base    | current | history1     | history2 |   |
|-----------|--------|---------------|---------|--------------|----------|---|
| Silicon   | ppm    | ASTM D5185(m) | >22     | <b>4</b>     | 6        | 4 |
| Sodium    | ppm    | ASTM D5185(m) | >31     | <b>1</b>     | 2        | 2 |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | 0        | 0 |

## INFRA-RED

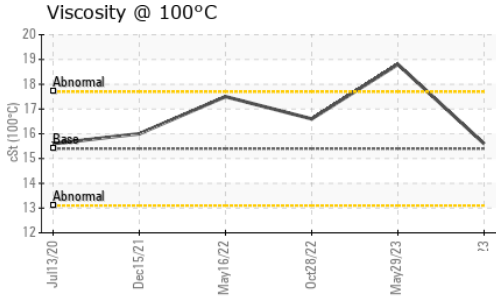
|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >3      | <b>1.4</b>  | ▲ 5      | 2.5  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>7.8</b>  | 15.4     | 10.7 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30     | <b>22.5</b> | 36.1     | 26.7 |

## FLUID DEGRADATION

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25     | <b>15.4</b> | 23.9     | 18.5 |



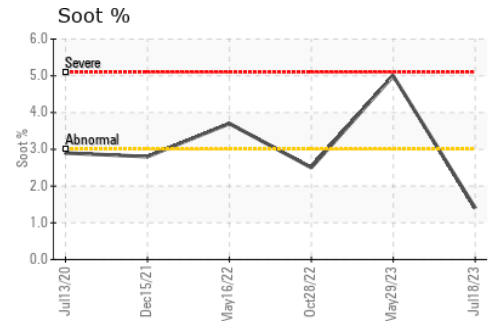
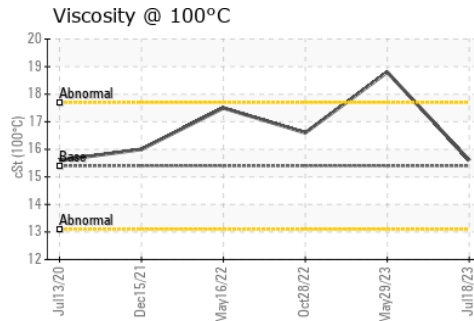
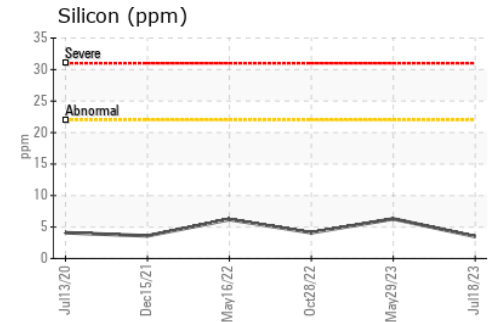
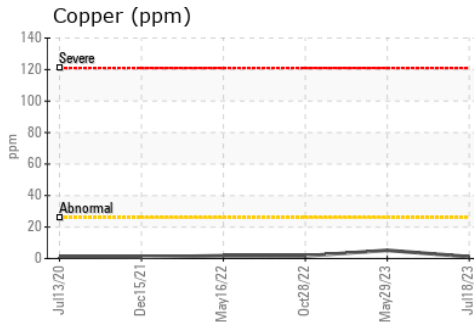
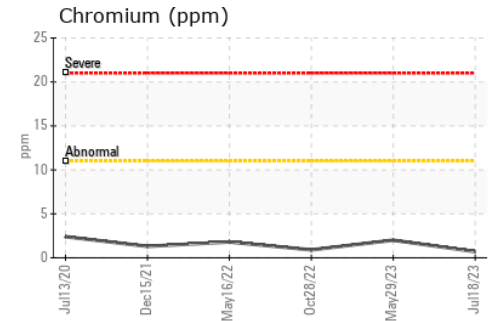
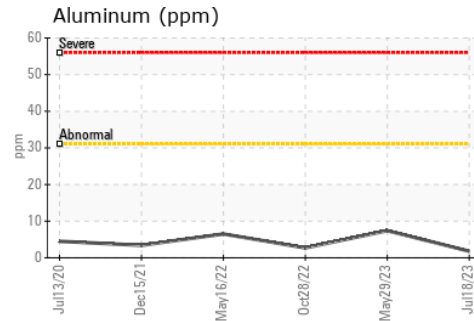
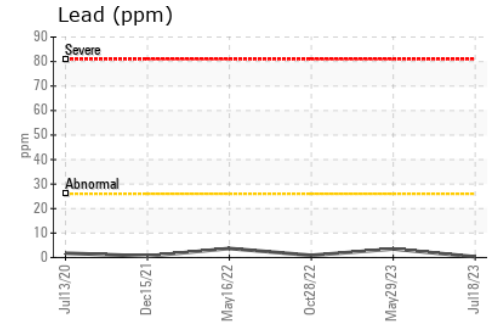
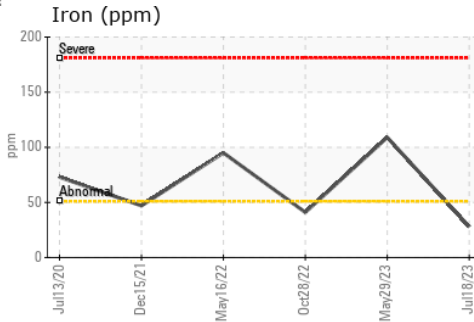
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual*    | >0.21   | NEG      | NEG      |
| Free Water       | scalar | Visual*    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base    | current | history1    | history2 |      |
|------------------|--------|---------------|---------|-------------|----------|------|
| Visc @ 100°C     | cSt    | ASTM D7279(m) | 15.4    | <b>15.6</b> | ▲ 18.8   | 16.6 |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 720 - Lafleche - Landfill  
**Sample No.** : GFL0087394 **Received** : 25 Jul 2023  
**Lab Number** : 02571891 **Diagnosed** : 25 Jul 2023  
**Unique Number** : 5616942 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

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