



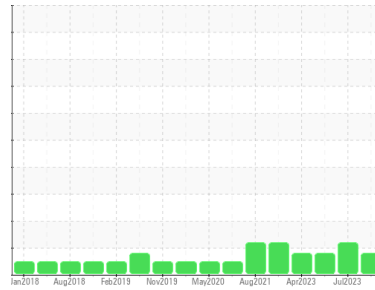
# OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Machine Id  
**801027**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (22 LTR)**



## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring. No other contaminants were detected 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>GFL</b>         | GFL0086487  | GFL0081991  |
| Sample Date   | Client Info |             | <b>15 Aug 2023</b> | 20 Jul 2023 | 10 May 2023 |
| Machine Age   | hrs         | Client Info | <b>0</b>           | 38463       | 12105       |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>N/A</b>         | Changed     | N/A         |
| Sample Status |             |             | <b>MARGINAL</b>    | ABNORMAL    | MARGINAL    |

## CONTAMINATION

|        | method    | limit/base | current    | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| Glycol | WC Method |            | <b>NEG</b> | NEG      | NEG      |

## WEAR METALS

|           | method | limit/base         | current      | history1 | history2 |
|-----------|--------|--------------------|--------------|----------|----------|
| Iron      | ppm    | ASTM D5185(m) >80  | <b>7</b>     | 27       | 8        |
| Chromium  | ppm    | ASTM D5185(m) >5   | <b>&lt;1</b> | 1        | <1       |
| Nickel    | ppm    | ASTM D5185(m) >2   | <b>&lt;1</b> | <1       | <1       |
| Titanium  | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | <1       |
| Silver    | ppm    | ASTM D5185(m) >3   | <b>0</b>     | 0        | 0        |
| Aluminum  | ppm    | ASTM D5185(m) >30  | <b>1</b>     | 2        | 1        |
| Lead      | ppm    | ASTM D5185(m) >30  | <b>0</b>     | 0        | 0        |
| Copper    | ppm    | ASTM D5185(m) >150 | <b>&lt;1</b> | <1       | <1       |
| Tin       | ppm    | ASTM D5185(m) >5   | <b>0</b>     | 0        | 0        |
| Antimony  | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | <1       |
| 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>9</b>     | 8        | 15       |
| Barium     | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185(m) 60   | <b>57</b>    | 57       | 58       |
| Manganese  | ppm    | ASTM D5185(m) 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185(m) 1010 | <b>924</b>   | 904      | 926      |
| Calcium    | ppm    | ASTM D5185(m) 1070 | <b>1025</b>  | 987      | 1109     |
| Phosphorus | ppm    | ASTM D5185(m) 1150 | <b>1029</b>  | 1003     | 1087     |
| Zinc       | ppm    | ASTM D5185(m) 1270 | <b>1136</b>  | 1129     | 1205     |
| Sulfur     | ppm    | ASTM D5185(m) 2060 | <b>2544</b>  | 2255     | 2662     |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |

## CONTAMINANTS

|           | method | limit/base        | current      | history1     | history2     |
|-----------|--------|-------------------|--------------|--------------|--------------|
| Silicon   | ppm    | ASTM D5185(m) >20 | <b>4</b>     | 6            | 3            |
| Sodium    | ppm    | ASTM D5185(m)     | <b>5</b>     | 15           | 7            |
| Potassium | ppm    | ASTM D5185(m) >20 | <b>&lt;1</b> | 1            | <1           |
| Fuel      | %      | ASTM D7593* >5    | <b>▲ 3.1</b> | <b>▲ 7.2</b> | <b>▲ 2.9</b> |

## INFRA-RED

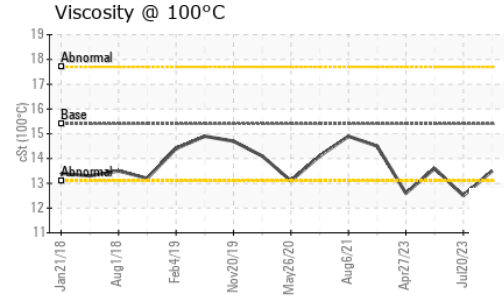
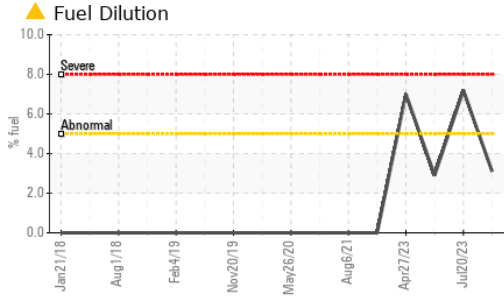
|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | ASTM D7844* >3  | <b>0</b>    | 0.5      | 0.1      |
| Nitration | Abs/cm   | ASTM D7624* >20 | <b>6.5</b>  | 12.1     | 7.2      |
| Sulfation | Abs/.1mm | ASTM D7415* >30 | <b>19.4</b> | 23.5     | 19.6     |

## FLUID DEGRADATION

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* >25 | <b>14.5</b> | 22.4     | 15.4     |



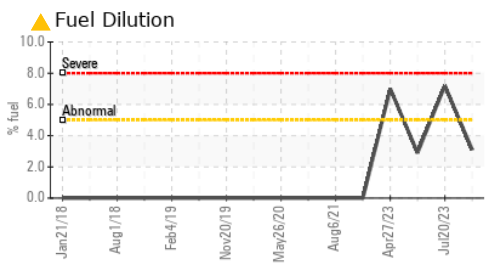
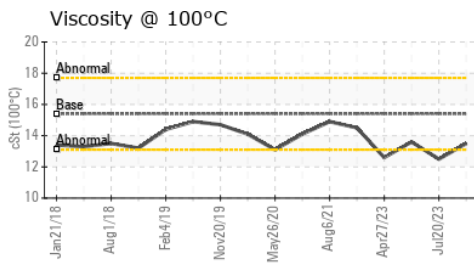
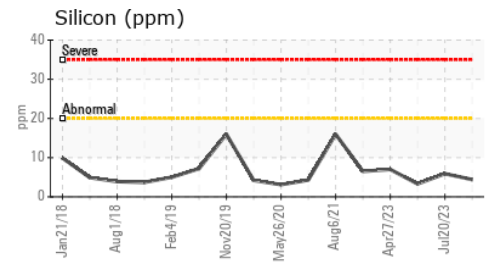
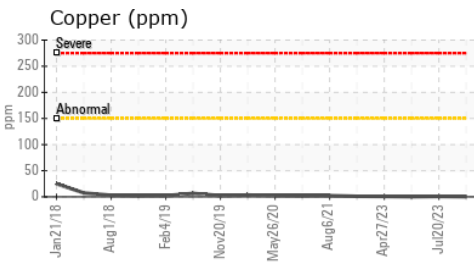
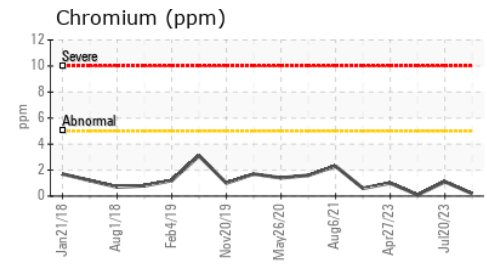
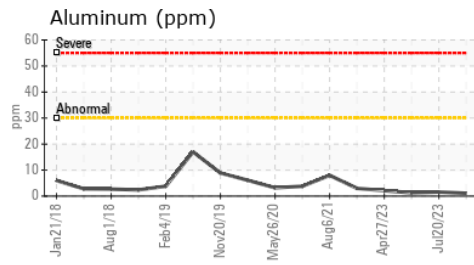
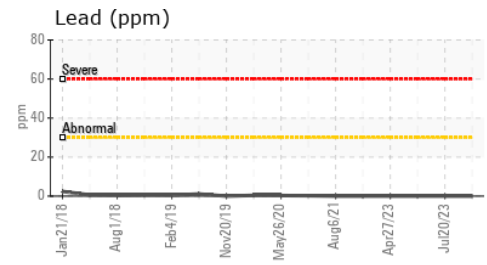
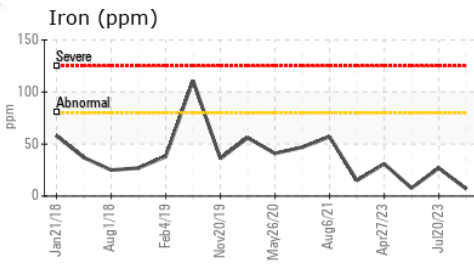
# OIL ANALYSIS REPORT



| 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 D7279(m) | 15.4    | 13.5     | ▲ 12.5   | 13.6 |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL **Received** : 16 Aug 2023  
**Lab Number** : 02576150 **Diagnosed** : 17 Aug 2023  
**Unique Number** : 5629210 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: PercentFuel, Visual )

**GFL Environmental - 217 - Aurora**  
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 AURORA, ON  
 CA L4G 0K6  
 Contact: Mike Havens  
 MHavens@gflenv.com  
 T:  
 F: (905)713-2445

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.