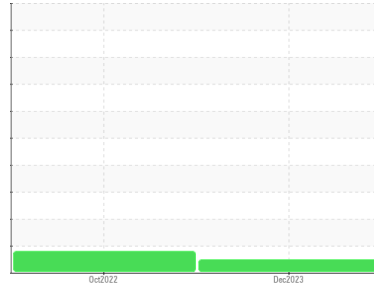


# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**25094**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON HP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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>PC0083807</b>   | PC0056518   | ---      |
| Sample Date        | Client Info |             |            | <b>24 Dec 2023</b> | 12 Oct 2022 | ---      |
| Machine Age        | mths        | Client Info |            | <b>0</b>           | 9676        | ---      |
| Oil Age            | mths        | Client Info |            | <b>6</b>           | 0           | ---      |
| Oil Changed        | Client Info |             |            | <b>N/A</b>         | Changed     | ---      |
| Sample Status      |             |             |            | <b>NORMAL</b>      | MARGINAL    | ---      |

| CONTAMINATION |           | method | limit/base | current        | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel          | WC Method | >3.0   |            | <b>&lt;1.0</b> | ▲ 2.1    | ---      |
| Water         | WC Method | >0.2   |            | <b>NEG</b>     | NEG      | ---      |
| Glycol        | WC Method |        |            | <b>NEG</b>     | NEG      | ---      |

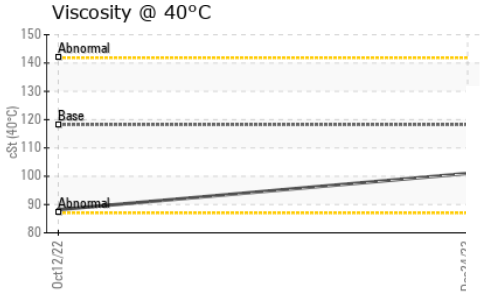
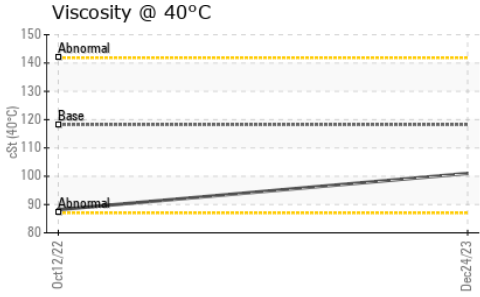
| WEAR METALS |     | method        | limit/base | current      | history1 | history2 |
|-------------|-----|---------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185(m) | >75        | <b>36</b>    | 37       | ---      |
| Chromium    | ppm | ASTM D5185(m) | >5         | <b>1</b>     | 1        | ---      |
| Nickel      | ppm | ASTM D5185(m) | >4         | <b>&lt;1</b> | <1       | ---      |
| Titanium    | ppm | ASTM D5185(m) | >2         | <b>0</b>     | <1       | ---      |
| Silver      | ppm | ASTM D5185(m) | >2         | <b>&lt;1</b> | 1        | ---      |
| Aluminum    | ppm | ASTM D5185(m) | >15        | <b>7</b>     | 7        | ---      |
| Lead        | ppm | ASTM D5185(m) | >25        | <b>6</b>     | 12       | ---      |
| Copper      | ppm | ASTM D5185(m) | >100       | <b>25</b>    | 266      | ---      |
| Tin         | ppm | ASTM D5185(m) | >4         | <b>&lt;1</b> | 2        | ---      |
| Antimony    | ppm | ASTM D5185(m) |            | <b>0</b>     | <1       | ---      |
| Vanadium    | ppm | ASTM D5185(m) |            | <b>0</b>     | 0        | ---      |
| Beryllium   | ppm | ASTM D5185(m) |            | <b>0</b>     | 0        | ---      |
| Cadmium     | ppm | ASTM D5185(m) |            | <b>0</b>     | 0        | ---      |

| ADDITIVES  |     | method        | limit/base | current      | history1 | history2 |
|------------|-----|---------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185(m) | 0          | <b>2</b>     | 47       | ---      |
| Barium     | ppm | ASTM D5185(m) | 0          | <b>0</b>     | 1        | ---      |
| Molybdenum | ppm | ASTM D5185(m) | 60         | <b>59</b>    | 59       | ---      |
| Manganese  | ppm | ASTM D5185(m) | 0          | <b>&lt;1</b> | 4        | ---      |
| Magnesium  | ppm | ASTM D5185(m) | 1010       | <b>942</b>   | 1029     | ---      |
| Calcium    | ppm | ASTM D5185(m) | 1070       | <b>1035</b>  | 1005     | ---      |
| Phosphorus | ppm | ASTM D5185(m) | 1150       | <b>895</b>   | 1046     | ---      |
| Zinc       | ppm | ASTM D5185(m) | 1270       | <b>1104</b>  | 1188     | ---      |
| Sulfur     | ppm | ASTM D5185(m) | 2060       | <b>2484</b>  | 2598     | ---      |
| Lithium    | ppm | ASTM D5185(m) |            | <b>&lt;1</b> | <1       | ---      |

| CONTAMINANTS |     | method        | limit/base | current   | history1 | history2 |
|--------------|-----|---------------|------------|-----------|----------|----------|
| Silicon      | ppm | ASTM D5185(m) | >25        | <b>7</b>  | 14       | ---      |
| Sodium       | ppm | ASTM D5185(m) |            | <b>4</b>  | 2        | ---      |
| Potassium    | ppm | ASTM D5185(m) | >20        | <b>17</b> | 16       | ---      |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | ASTM D7844* | >6         | <b>0.8</b>  | 0.4      | ---      |
| Nitration | Abs/cm   | ASTM D7624* | >20        | <b>11.1</b> | 10.2     | ---      |
| Sulfation | Abs/.1mm | ASTM D7415* | >30        | <b>27.3</b> | 24.1     | ---      |

# OIL ANALYSIS REPORT

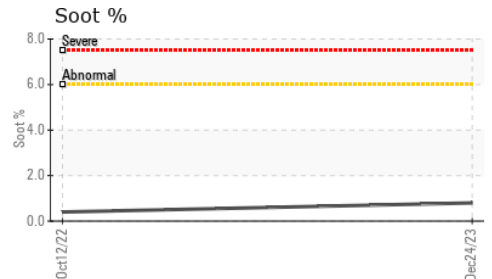
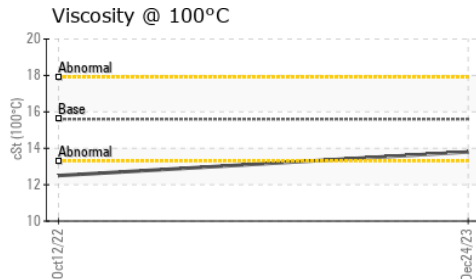
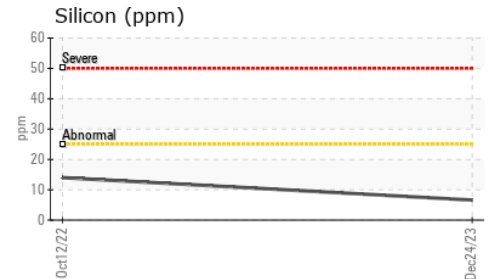
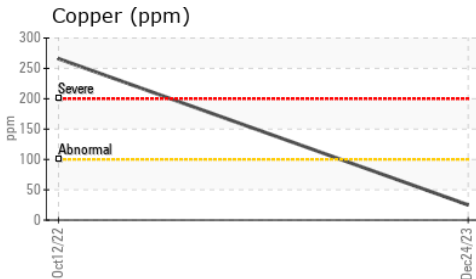
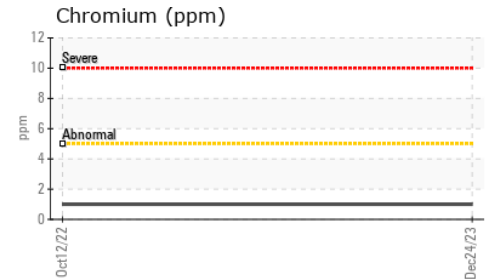
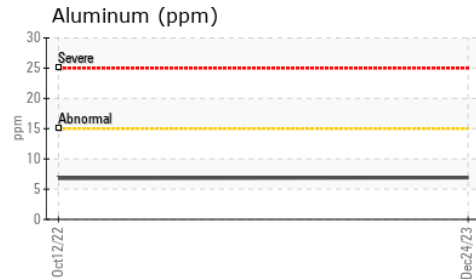
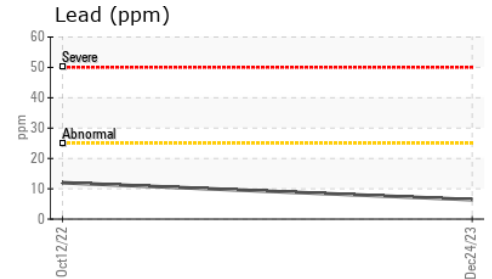
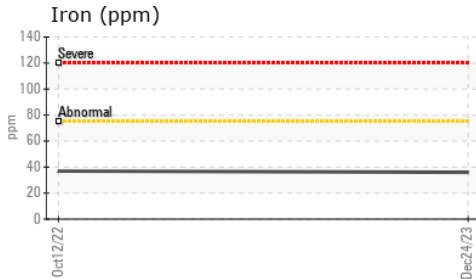


| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs./1mm | ASTM D7414* | >25        | <b>27.0</b> | 20.4     | ---      |

| VISUAL           |        | method  | limit/base | current    | history1 | history2 |
|------------------|--------|---------|------------|------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2       | <b>NEG</b> | NEG      | ---      |
| Free Water       | scalar | Visual* |            | <b>NEG</b> | NEG      | ---      |

| FLUID PROPERTIES     |       | method        | limit/base | current     | history1 | history2 |
|----------------------|-------|---------------|------------|-------------|----------|----------|
| Visc @ 40°C          | cSt   | ASTM D7279(m) | 118.2      | <b>101</b>  | 88.2     | ---      |
| Visc @ 100°C         | cSt   | ASTM D7279(m) | 15.6       | <b>13.8</b> | 12.5     | ---      |
| Viscosity Index (VI) | Scale | ASTM D2270*   | 139        | <b>137</b>  | 137      | ---      |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0083807 **Received** : 01 Mar 2024  
**Lab Number** : **02619141** **Tested** : 01 Mar 2024  
**Unique Number** : 5736251 **Diagnosed** : 01 Mar 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: KV40, VI )

**TORONTO FIRE SERVICES**  
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 antonio.rodrigues@toronto.ca  
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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.