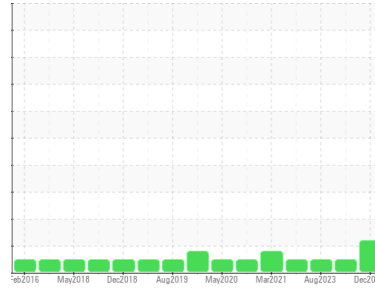




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area  
**[1190700]**  
 Machine Id  
**7980**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (19 LTR)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>WC0875105</b>   | GFL0094210  | GFL0091046  |
| Sample Date   | Client Info |             | <b>06 Dec 2023</b> | 03 Oct 2023 | 24 Aug 2023 |
| Machine Age   | kms         | Client Info | <b>194946</b>      | 143821      | 143821      |
| Oil Age       | kms         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>ABNORMAL</b>    | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current    | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| 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 D5185(m) | >80     | <b>21</b>    | 24       | 50 |
| Chromium  | ppm    | ASTM D5185(m) | >5      | <b>&lt;1</b> | <1       | 2  |
| Nickel    | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | 0        | <1 |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>&lt;1</b> | <1       | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >30     | <b>2</b>     | 3        | 7  |
| Lead      | ppm    | ASTM D5185(m) | >30     | <b>&lt;1</b> | <1       | <1 |
| Copper    | ppm    | ASTM D5185(m) | >150    | <b>&lt;1</b> | 2        | 2  |
| Tin       | ppm    | ASTM D5185(m) | >5      | <b>0</b>     | 0        | 0  |
| 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>39</b>    | 3        | 6    |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | <1       | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 60      | <b>59</b>    | 57       | 57   |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 1010    | <b>793</b>   | 908      | 901  |
| Calcium    | ppm    | ASTM D5185(m) | 1070    | <b>1005</b>  | 1016     | 989  |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>899</b>   | 973      | 982  |
| Zinc       | ppm    | ASTM D5185(m) | 1270    | <b>1094</b>  | 1155     | 1130 |
| Sulfur     | ppm    | ASTM D5185(m) | 2060    | <b>2312</b>  | 2418     | 2329 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

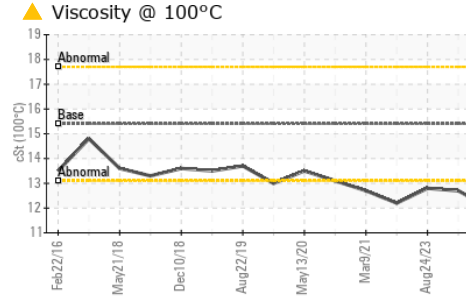
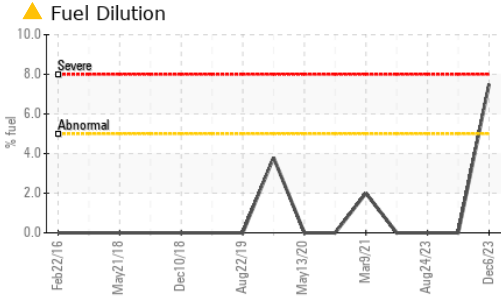
|           | method | limit/base    | current | history1     | history2 |      |
|-----------|--------|---------------|---------|--------------|----------|------|
| Silicon   | ppm    | ASTM D5185(m) | >20     | <b>5</b>     | 4        | 7    |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>5</b>     | 6        | 6    |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | <1       | 2    |
| Fuel      | %      | ASTM D7593*   | >5      | <b>▲ 7.5</b> | <1.0     | <1.0 |

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >3      | <b>0.3</b>  | 0.3      | 0.5  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>9.3</b>  | 9.0      | 11.7 |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>20.2</b> | 19.5     | 22.5 |



# OIL ANALYSIS REPORT

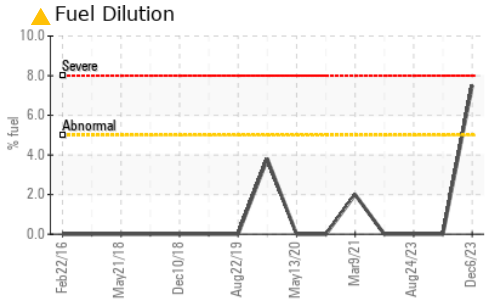
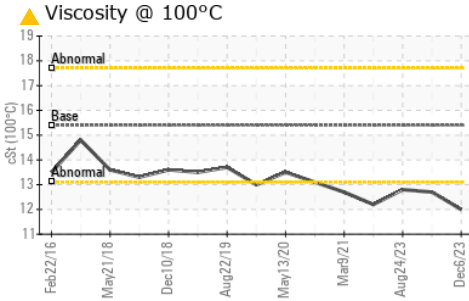
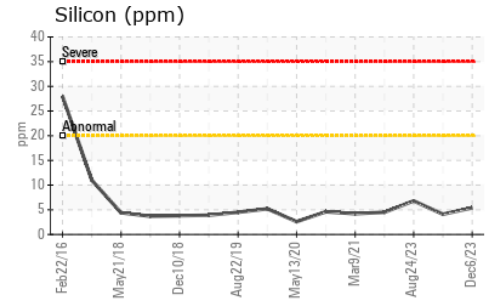
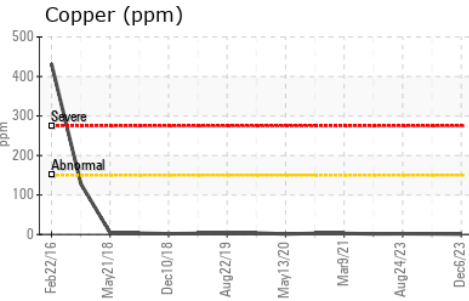
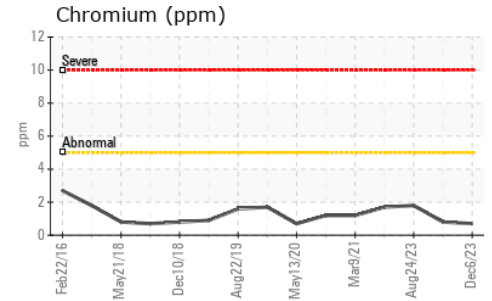
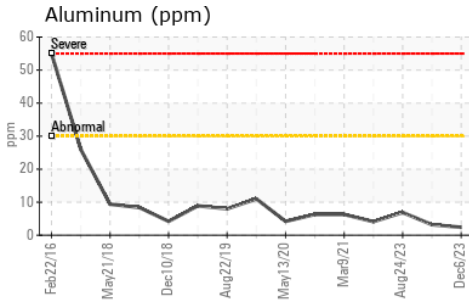
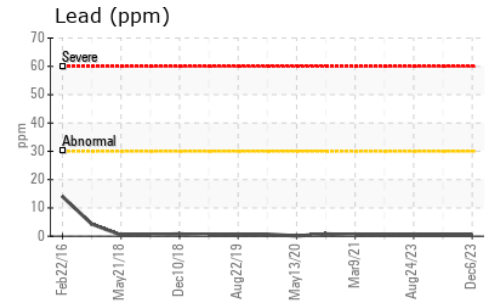
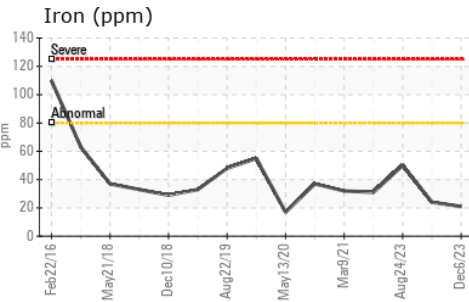


| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs./1mm | ASTM D7414* | >25        | <b>17.4</b> | 16.3     | 18.5     |

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

| FLUID PROPERTIES |     | method        | limit/base | current       | history1 | history2 |
|------------------|-----|---------------|------------|---------------|----------|----------|
| Visc @ 100°C     | cSt | ASTM D7279(m) | 15.4       | <b>▲ 12.0</b> | 12.7     | 12.8     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0875105  
**Lab Number** : 02601785  
**Unique Number** : 5694870  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel )

**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.