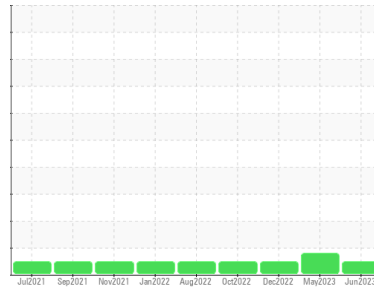




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**401108**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

### 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>GFL0084109</b>  | GFL0063679  | GFL0063527  |
| Sample Date   | Client Info |             | <b>21 Jun 2023</b> | 01 May 2023 | 15 Dec 2022 |
| Machine Age   | kms         | Client Info | <b>812757</b>      | 32002       | 30652       |
| Oil Age       | kms         | Client Info | <b>0</b>           | 600         | 600         |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | MARGINAL    | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >5         | <b>&lt;1.0</b> | ▲ 2.9    | <1.0     |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron      | ppm    | ASTM D5185(m) | >100    | <b>12</b>    | 22       | 17 |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | <1       | <1 |
| Nickel    | ppm    | ASTM D5185(m) | >4      | <b>0</b>     | 0        | 0  |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1 |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>0</b>     | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>2</b>     | 1        | 3  |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>1</b>     | 2        | 2  |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>&lt;1</b> | 1        | 1  |
| Tin       | ppm    | ASTM D5185(m) | >15     | <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>4</b>     | 4        | 2    |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 60      | <b>59</b>    | 62       | 58   |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | <1       | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 1010    | <b>976</b>   | 1003     | 961  |
| Calcium    | ppm    | ASTM D5185(m) | 1070    | <b>1037</b>  | 1117     | 1090 |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>1043</b>  | 1088     | 1062 |
| Zinc       | ppm    | ASTM D5185(m) | 1270    | <b>1174</b>  | 1221     | 1192 |
| Sulfur     | ppm    | ASTM D5185(m) | 2060    | <b>2507</b>  | 2615     | 2573 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

|           | method | limit/base    | current | history1 | history2 |   |
|-----------|--------|---------------|---------|----------|----------|---|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>4</b> | 3        | 3 |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>4</b> | 4        | 4 |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>2</b> | 1        | 5 |

## INFRA-RED

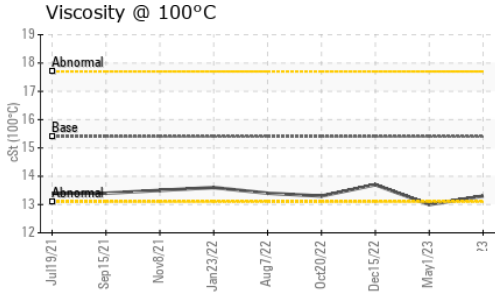
|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >3      | <b>0.2</b>  | 0.2      | 0.2  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>7.4</b>  | 8.2      | 8.3  |
| Sulfation | Abs/.1mm | ASTM D7415* | >30     | <b>20.2</b> | 20.6     | 21.5 |

## FLUID DEGRADATION

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25     | <b>16.4</b> | 17.6     | 17.3 |



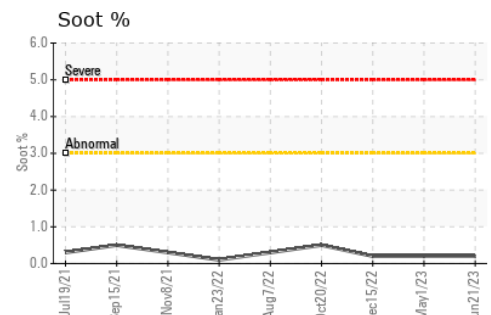
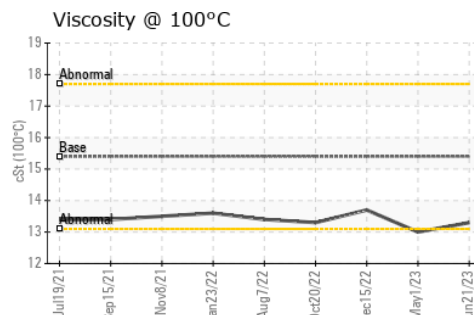
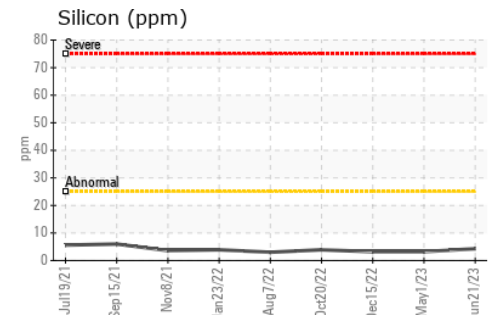
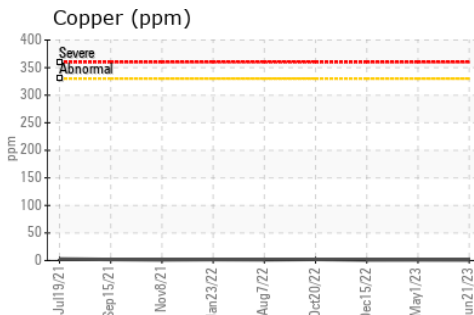
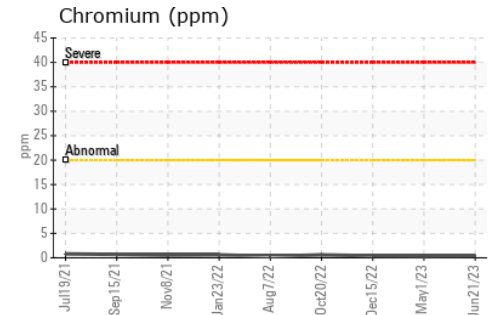
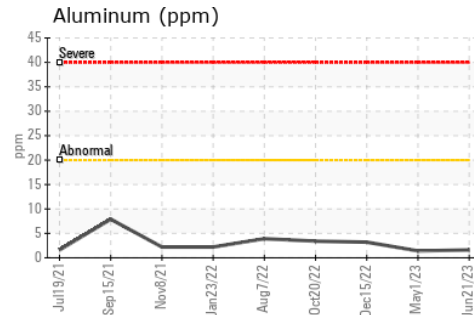
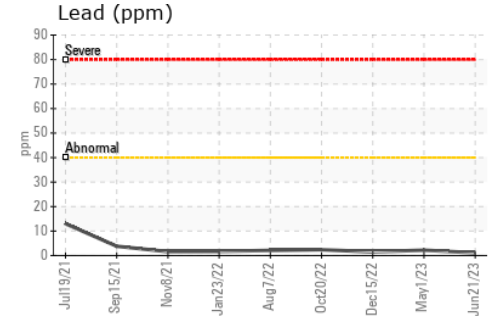
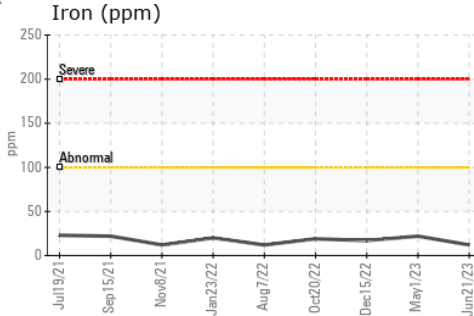
# OIL ANALYSIS REPORT



| 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>13.3</b> | 13.0     | 13.7     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 574 - Vancouver Fleet  
**Sample No.** : GFL0084109 **Received** : 14 Jul 2023  
**Lab Number** : 02569995 **Diagnosed** : 14 Jul 2023  
**Unique Number** : 5607041 **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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