



Machine Id  
**4499**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA 15W40 (38 LTR)**

### RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>GFL0117115</b>  | GFL0110255  | GFL0097781  |
| Sample Date    |     | Client Info |           | <b>25 Jun 2024</b> | 21 Feb 2024 | 26 Dec 2023 |
| Machine Age    | hrs | Client Info |           | <b>17322</b>       | 370743      | 16420       |
| Oil Age        | hrs | Client Info |           | <b>600</b>         | 0           | 600         |
| Filter Age     | hrs | Client Info |           | <b>600</b>         | 0           | 600         |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

### WEAR

All component wear rates are normal.

|              |        |               |      |              |     |     |
|--------------|--------|---------------|------|--------------|-----|-----|
| Iron         | ppm    | ASTM D5185(m) | >120 | <b>6</b>     | 5   | 6   |
| Chromium     | ppm    | ASTM D5185(m) | >20  | <b>0</b>     | 0   | 0   |
| Nickel       | ppm    | ASTM D5185(m) | >5   | <b>&lt;1</b> | <1  | 1   |
| Titanium     | ppm    | ASTM D5185(m) | >2   | <b>0</b>     | 0   | 0   |
| Silver       | ppm    | ASTM D5185(m) | >2   | <b>0</b>     | 0   | 0   |
| Aluminum     | ppm    | ASTM D5185(m) | >20  | <b>4</b>     | 5   | 5   |
| Lead         | ppm    | ASTM D5185(m) | >40  | <b>&lt;1</b> | <1  | <1  |
| Copper       | ppm    | ASTM D5185(m) | >330 | <b>&lt;1</b> | <1  | <1  |
| Tin          | ppm    | ASTM D5185(m) | >15  | <b>0</b>     | 0   | 0   |
| Vanadium     | ppm    | ASTM D5185(m) |      | <b>0</b>     | 0   | 0   |
| White Metal  | scalar | Visual*       | NONE | <b>NONE</b>  | --- | --- |
| Yellow Metal | scalar | Visual*       | NONE | <b>NONE</b>  | --- | --- |

### CONTAMINATION

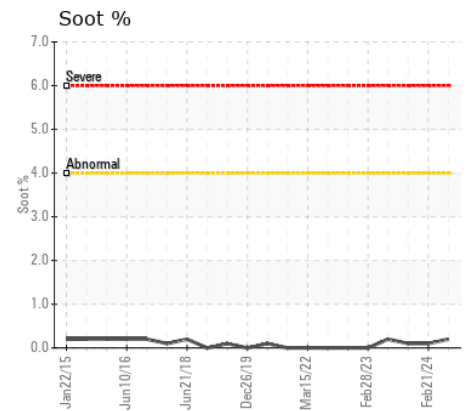
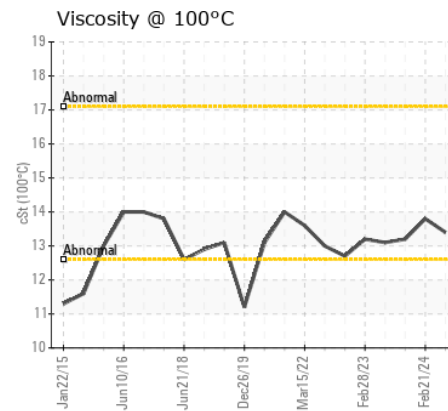
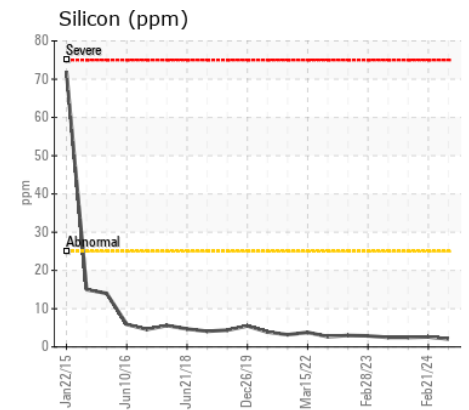
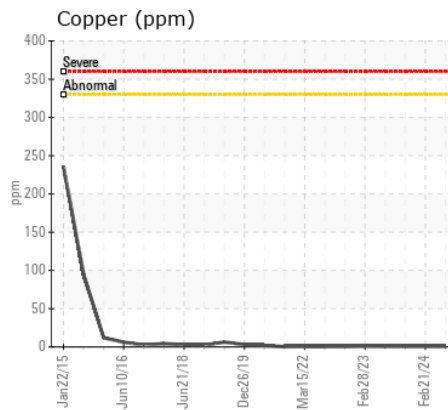
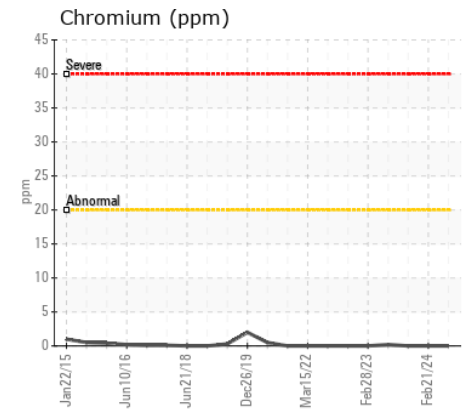
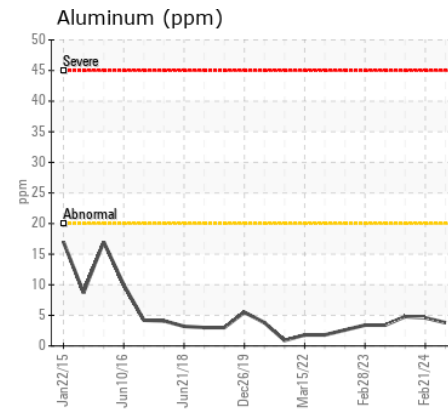
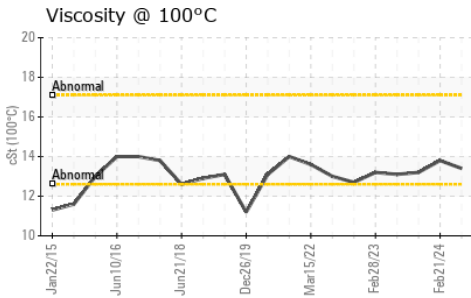
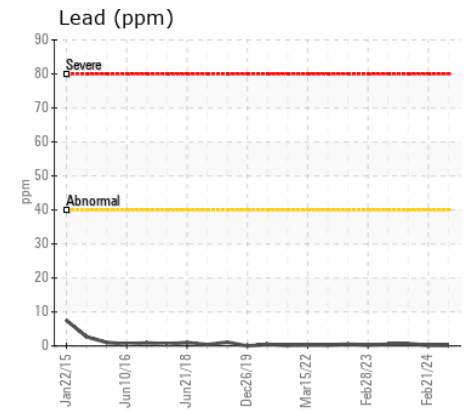
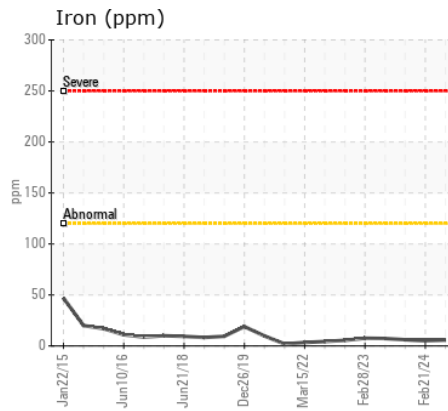
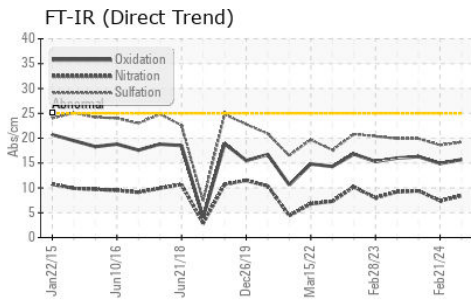
There is no indication of any contamination in the oil.

|                  |          |               |       |                |       |       |
|------------------|----------|---------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185(m) | >25   | <b>2</b>       | 3     | 2     |
| Potassium        | ppm      | ASTM D5185(m) | >20   | <b>&lt;1</b>   | <1    | <1    |
| Fuel             |          | WC Method     | >3.0  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method     | >0.2  | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method     |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | ASTM D7844*   | >4    | <b>0.2</b>     | 0.1   | 0.1   |
| Nitration        | Abs/cm   | ASTM D7624*   | >20   | <b>8.4</b>     | 7.4   | 9.4   |
| Sulfation        | Abs/.1mm | ASTM D7415*   | >30   | <b>19.2</b>    | 18.6  | 19.9  |
| Silt             | scalar   | Visual*       | NONE  | <b>NONE</b>    | ---   | ---   |
| Debris           | scalar   | Visual*       | NONE  | <b>NONE</b>    | ---   | ---   |
| Sand/Dirt        | scalar   | Visual*       | NONE  | <b>VLITE</b>   | ---   | ---   |
| Appearance       | scalar   | Visual*       | NORML | <b>NORML</b>   | ---   | ---   |
| Odor             | scalar   | Visual*       | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | Visual*       | >0.2  | <b>NEG</b>     | NEG   | NEG   |

### FLUID CONDITION

The condition of the oil is acceptable for the time in service.

|              |          |               |     |              |      |      |
|--------------|----------|---------------|-----|--------------|------|------|
| Sodium       | ppm      | ASTM D5185(m) |     | <b>4</b>     | 2    | 3    |
| Boron        | ppm      | ASTM D5185(m) |     | <b>2</b>     | 2    | 2    |
| Barium       | ppm      | ASTM D5185(m) |     | <b>0</b>     | 0    | 0    |
| Molybdenum   | ppm      | ASTM D5185(m) |     | <b>57</b>    | 58   | 58   |
| Manganese    | ppm      | ASTM D5185(m) |     | <b>&lt;1</b> | 0    | 0    |
| Magnesium    | ppm      | ASTM D5185(m) |     | <b>925</b>   | 935  | 940  |
| Calcium      | ppm      | ASTM D5185(m) |     | <b>1052</b>  | 1055 | 1055 |
| Phosphorus   | ppm      | ASTM D5185(m) |     | <b>937</b>   | 991  | 960  |
| Zinc         | ppm      | ASTM D5185(m) |     | <b>1162</b>  | 1141 | 1161 |
| Sulfur       | ppm      | ASTM D5185(m) |     | <b>2407</b>  | 2647 | 2592 |
| Oxidation    | Abs/.1mm | ASTM D7414*   | >25 | <b>15.7</b>  | 14.9 | 16.3 |
| Visc @ 100°C | cSt      | ASTM D7279(m) |     | <b>13.4</b>  | 13.8 | 13.2 |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0117115  
**Lab Number** : 02645129  
**Unique Number** : 5802668  
**Test Package** : MOB 1 ( Additional Tests: Visual )

**GFL Environmental - 209 - Hamilton**  
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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.