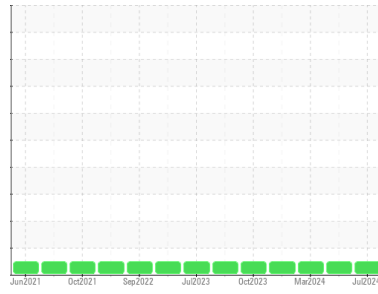




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**411005**  
 Component  
**Diesel Engine**  
 Fluid  
**CASTROL TECTION EXTRA SAE 15W-40 (42 LTR)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### 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>GFL0118902</b>  | GFL0094405  | GFL0086802  |
| Sample Date   | Client Info |             | <b>04 Jul 2024</b> | 17 Apr 2024 | 12 Mar 2024 |
| Machine Age   | hrs         | Client Info | <b>9733</b>        | 9226        | 9175        |
| Oil Age       | hrs         | Client Info | <b>1200</b>        | 9226        | 600         |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| 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      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron      | ppm    | ASTM D5185(m) | >120    | <b>7</b>     | 3        | 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>&lt;1</b> | 1        | <1 |
| Silver    | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>2</b>     | 3        | 3  |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>0</b>     | 0        | <1 |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>1</b>     | <1       | 1  |
| Tin       | ppm    | ASTM D5185(m) | >15     | <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) | 30      | <b>42</b>    | 64       | 41   |
| Barium     | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) |         | <b>86</b>    | 85       | 87   |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0    |
| Magnesium  | ppm    | ASTM D5185(m) | 110     | <b>77</b>    | 98       | 78   |
| Calcium    | ppm    | ASTM D5185(m) | 2740    | <b>2027</b>  | 2042     | 2095 |
| Phosphorus | ppm    | ASTM D5185(m) | 1240    | <b>959</b>   | 956      | 1016 |
| Zinc       | ppm    | ASTM D5185(m) | 1350    | <b>1151</b>  | 1108     | 1138 |
| Sulfur     | ppm    | ASTM D5185(m) | 3520    | <b>2925</b>  | 3009     | 3172 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

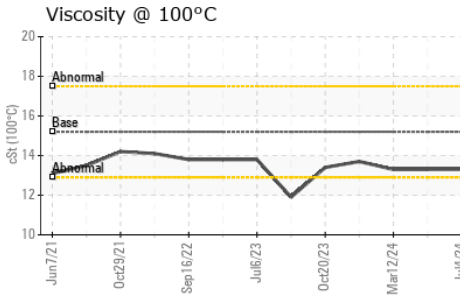
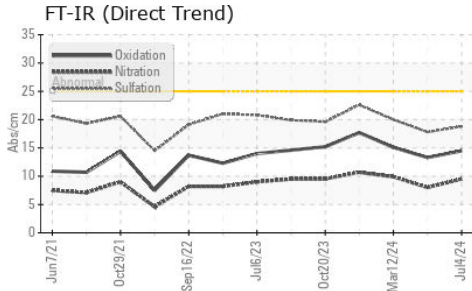
|           | method | limit/base    | current | history1 | history2 |   |
|-----------|--------|---------------|---------|----------|----------|---|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>3</b> | 2        | 3 |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>2</b> | 2        | 2 |
|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

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >4      | <b>0.1</b>  | 0        | 0.1  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>9.5</b>  | 8.0      | 9.9  |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>18.8</b> | 17.8     | 20.0 |



# OIL ANALYSIS REPORT



### FLUID DEGRADATION

|           | method   | limit/base  | current | history1 | history2 |
|-----------|----------|-------------|---------|----------|----------|
| Oxidation | Abs./1mm | ASTM D7414* | >25     | 14.5     | 13.3     |

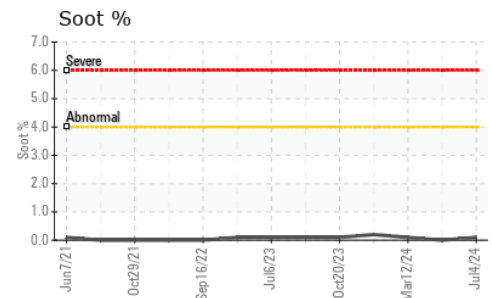
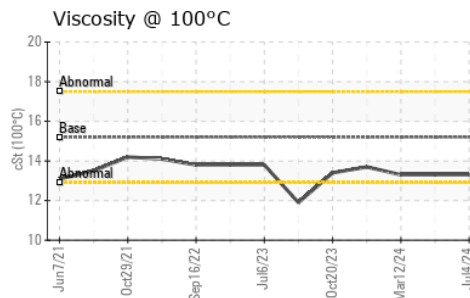
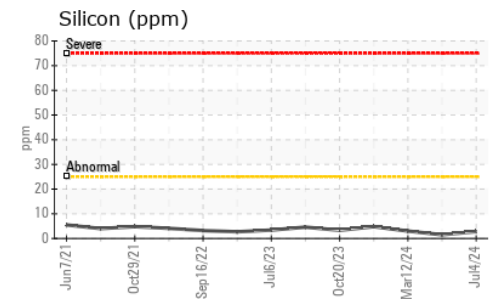
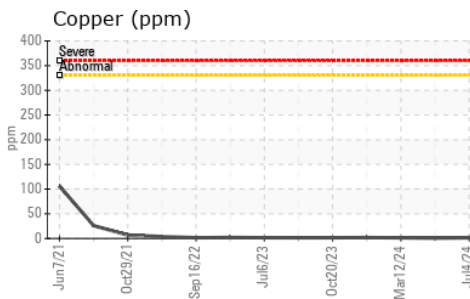
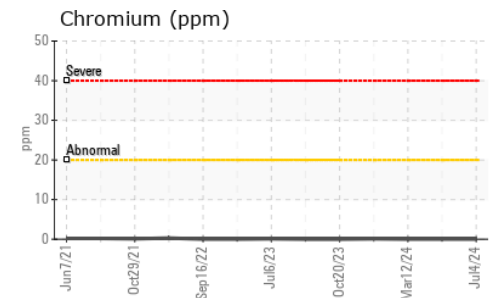
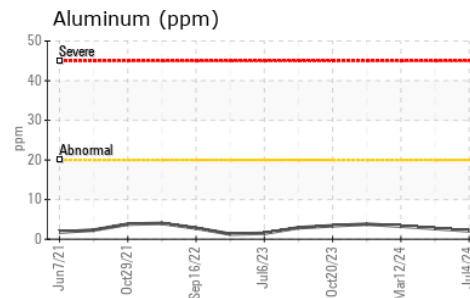
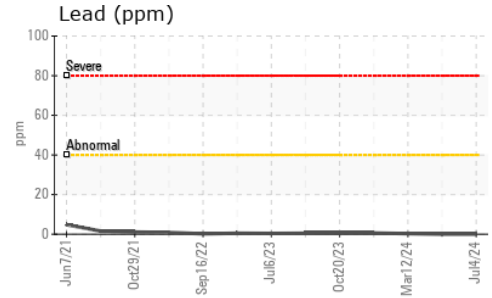
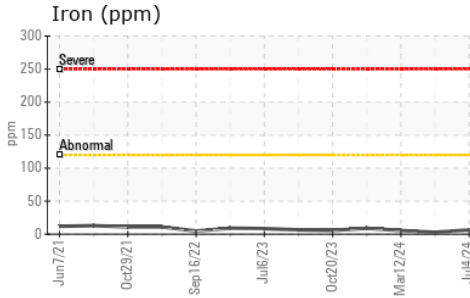
### VISUAL

|                  | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| 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) | 15.2    | 13.3     | 13.3     |

### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0118902  
**Lab Number** : 02645826  
**Unique Number** : 5803365  
**Test Package** : MOB 1

**GFL Environmental - 222 - Sandhill**  
 SANDHILL DISPOSAL & RECYCLING DIVIS, 19 COMMERCE ROAD  
 ORANGEVILLE, ON  
 CA L9W 3X5  
 Contact: GLENN COOK  
 gcook@gflenv.com  
 T: (519)940-4167  
 F:

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.