

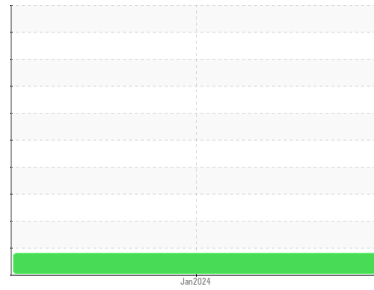


# OIL ANALYSIS REPORT



Area  
**(ML7040) 2730**  
 Machine Id  
**813031**  
 Component  
**Diesel Engine**  
 Fluid  
**{not provided} (--- GAL)**

## Sample Rating Trend



**WEAR**



## DIAGNOSIS

### ▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### ▲ Wear

The nickel level is abnormal. All other metal levels are typical for a new component breaking in.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info |             | <b>GFL0023773</b>  | ---      | ---      |
| Sample Date   | Client Info |             | <b>18 Jan 2024</b> | ---      | ---      |
| Machine Age   | hrs         | Client Info | <b>1119</b>        | ---      | ---      |
| Oil Age       | hrs         | Client Info | <b>1119</b>        | ---      | ---      |
| Oil Changed   | Client Info |             | <b>N/A</b>         | ---      | ---      |
| Sample Status |             |             | <b>ABNORMAL</b>    | ---      | ---      |

## CONTAMINATION

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

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >120 | <b>61</b>    | ---      | ---      |
| Chromium | ppm    | ASTM D5185m >20  | <b>2</b>     | ---      | ---      |
| Nickel   | ppm    | ASTM D5185m >5   | <b>▲ 28</b>  | ---      | ---      |
| Titanium | ppm    | ASTM D5185m >2   | <b>0</b>     | ---      | ---      |
| Silver   | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | ---      | ---      |
| Aluminum | ppm    | ASTM D5185m >20  | <b>3</b>     | ---      | ---      |
| Lead     | ppm    | ASTM D5185m >40  | <b>&lt;1</b> | ---      | ---      |
| Copper   | ppm    | ASTM D5185m >330 | <b>42</b>    | ---      | ---      |
| Tin      | ppm    | ASTM D5185m >15  | <b>4</b>     | ---      | ---      |
| Vanadium | ppm    | ASTM D5185m      | <b>&lt;1</b> | ---      | ---      |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | ---      | ---      |

## ADDITIVES

|            | method | limit/base  | current     | history1 | history2 |
|------------|--------|-------------|-------------|----------|----------|
| Boron      | ppm    | ASTM D5185m | <b>12</b>   | ---      | ---      |
| Barium     | ppm    | ASTM D5185m | <b>0</b>    | ---      | ---      |
| Molybdenum | ppm    | ASTM D5185m | <b>75</b>   | ---      | ---      |
| Manganese  | ppm    | ASTM D5185m | <b>3</b>    | ---      | ---      |
| Magnesium  | ppm    | ASTM D5185m | <b>998</b>  | ---      | ---      |
| Calcium    | ppm    | ASTM D5185m | <b>1200</b> | ---      | ---      |
| Phosphorus | ppm    | ASTM D5185m | <b>968</b>  | ---      | ---      |
| Zinc       | ppm    | ASTM D5185m | <b>1262</b> | ---      | ---      |
| Sulfur     | ppm    | ASTM D5185m | <b>2395</b> | ---      | ---      |

## CONTAMINANTS

|           | method | limit/base      | current   | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>17</b> | ---      | ---      |
| Sodium    | ppm    | ASTM D5185m     | <b>7</b>  | ---      | ---      |
| Potassium | ppm    | ASTM D5185m >20 | <b>5</b>  | ---      | ---      |

## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >4  | <b>0.7</b>  | ---      | ---      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>11.1</b> | ---      | ---      |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>22.6</b> | ---      | ---      |

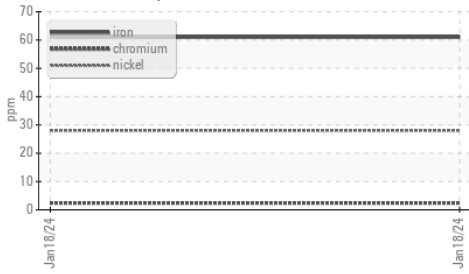
## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>20.9</b> | ---      | ---      |
| Base Number (BN) | mg KOH/g | ASTM D2896      | <b>4.8</b>  | ---      | ---      |

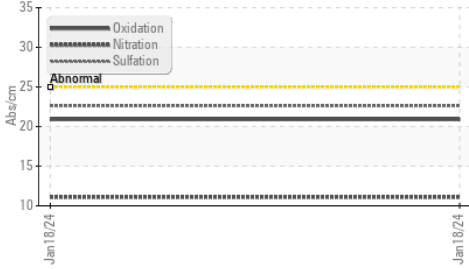


# OIL ANALYSIS REPORT

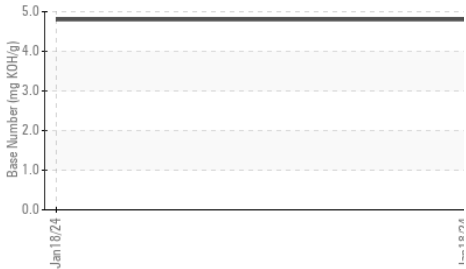
## ▲ Ferrous Alloys



## FT-IR (Direct Trend)



## Base Number



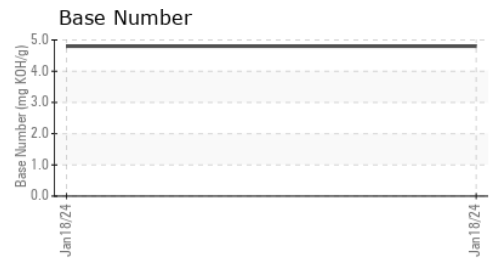
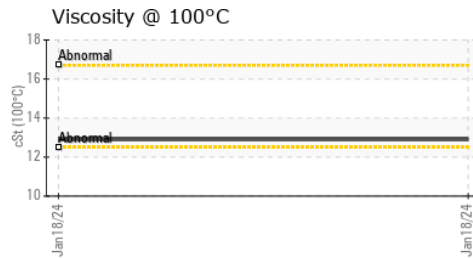
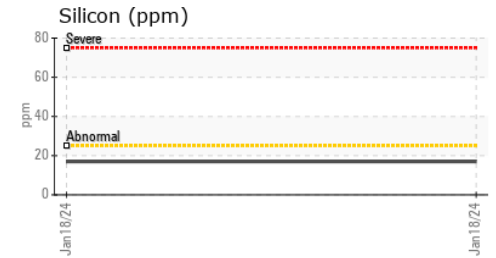
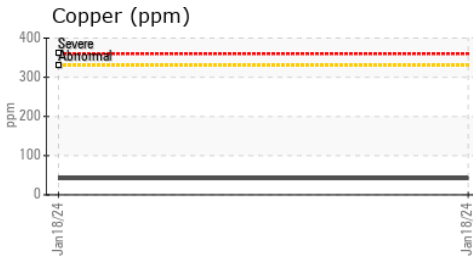
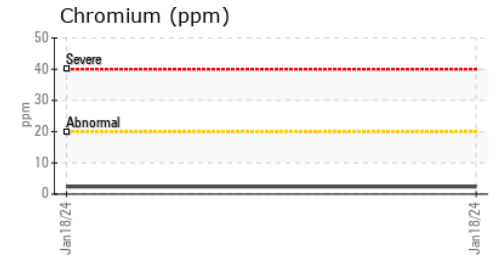
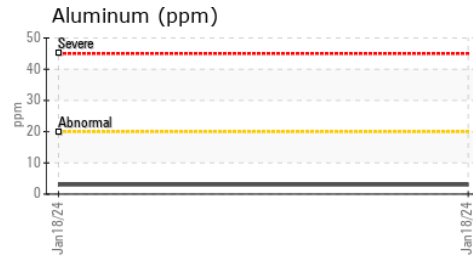
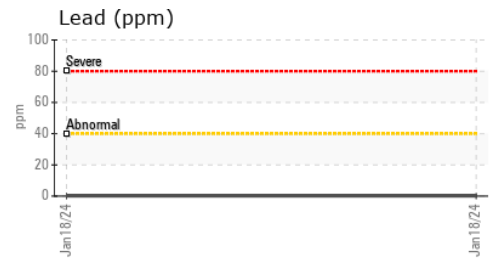
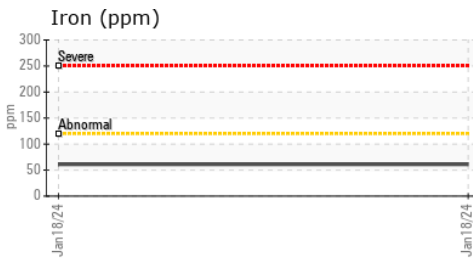
## Viscosity @ 100°C



| PARAMETER        | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | ---      |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | ---      |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | ---      |
| Silt             | scalar | *Visual    | NONE    | NONE     | ---      |
| Debris           | scalar | *Visual    | NONE    | NONE     | ---      |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | ---      |
| Appearance       | scalar | *Visual    | NORML   | NORML    | ---      |
| Odor             | scalar | *Visual    | NORML   | NORML    | ---      |
| Emulsified Water | scalar | *Visual    | >0.2    | NEG      | ---      |
| Free Water       | scalar | *Visual    |         | NEG      | ---      |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | 12.9    | ---      | ---      |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0023773  
**Lab Number** : 06065386  
**Unique Number** : 10836768  
**Test Package** : MOB1+

**Received** : 19 Jan 2024  
**Tested** : 22 Jan 2024  
**Diagnosed** : 22 Jan 2024 - Don Baldrige

**GFL Environmental - 045 - Tidewater**  
 3821 Cook Blvd.  
 Chesapeake, VA  
 US 23323

Contact: ELVIN RODRIGUEZ  
 elvinrodriguez@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:  
F: