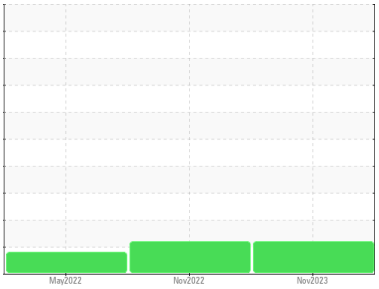
# OIL ANALYSIS REPORT

Sample Rating Trend




**VISUAL METAL**

Machine Id
**0379**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 10W30 (--- GAL)**

## DIAGNOSIS

**Recommendation**

Nous vous recommandons de vérifier la présence de particules métalliques visibles dans l`huile. Nous vous recommandons de vidanger l`huile de ce composant si vous ne l`avez pas déjà fait. Nous vous recommandons d`échantillonner de nouveau dès que possible afin de contrôler la situation.

**Wear**

Présence d`une concentration moyenne de métal visible.

**Contamination**

Il n`y a aucun indice de contamination dans l`huile.

**Fluid Condition**

l`huile n'est plus en état de service en raison d'une usure anomale et/ou sévère.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0096389** | GFL0061826 | GFL0043207 |
| Sample Date | | Client Info | | **30 Nov 2023** | 15 Nov 2022 | 09 May 2022 |
| Machine Age | hrs | Client Info | | **230711** | 22675 | 0 |
| Oil Age | hrs | Client Info | | **600** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | Changed | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | MARGINAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | ▲ 4.2 | ▲ 4.5 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >100 | **18** | 14 | 64 |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 1 |
| Nickel | ppm | ASTM D5185(m) | >2 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | <1 | 2 |
| Silver | ppm | ASTM D5185(m) | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | **5** | 3 | 4 |
| Lead | ppm | ASTM D5185(m) | >40 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | **10** | 8 | 10 |
| Tin | ppm | ASTM D5185(m) | >15 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | | **0** | <1 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 250 | **4** | 5 | 25 |
| Barium | ppm | ASTM D5185(m) | 10 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | **55** | 55 | 60 |
| Manganese | ppm | ASTM D5185(m) | | **<1** | <1 | 2 |
| Magnesium | ppm | ASTM D5185(m) | 450 | **830** | 839 | 375 |
| Calcium | ppm | ASTM D5185(m) | 3000 | **942** | 1014 | 1029 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **878** | 984 | 625 |
| Zinc | ppm | ASTM D5185(m) | 1350 | **1089** | 1069 | 684 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | **2341** | 2384 | 1844 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | 0 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **18** | 11 | 19 |
| Sodium | ppm | ASTM D5185(m) | | **9** | 8 | 26 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 1 | 1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **13.5** | 10.3 | 11.9 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **22.1** | 21.1 | 21.3 |

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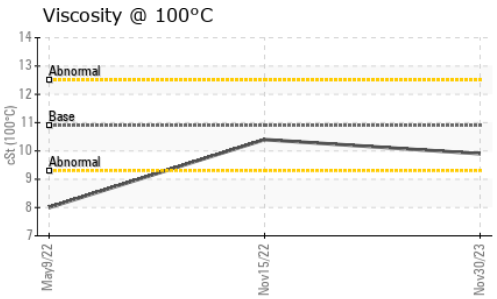
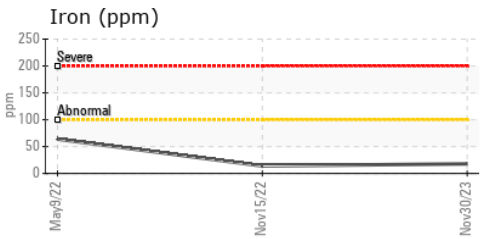


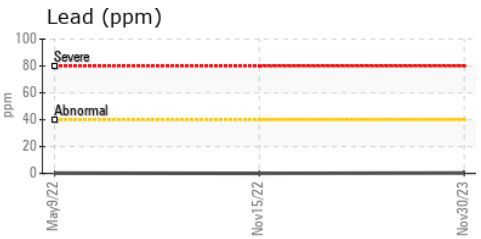

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **18.2** | 16.7 | 12.7 |

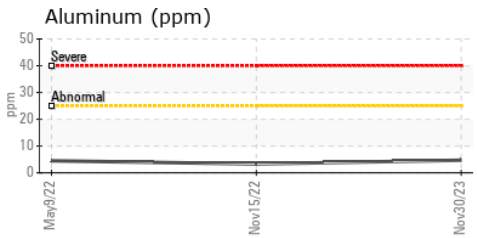
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | ▲ **LTMOD** | --- | VLITE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | --- | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | --- | NONE |
|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

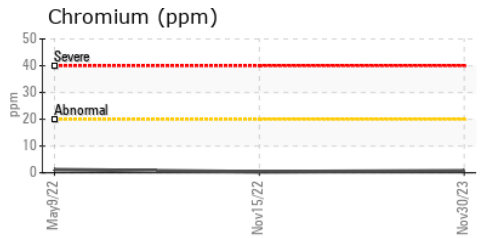
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 10.9 | **9.9** | ▲ 10.4 | 8 |

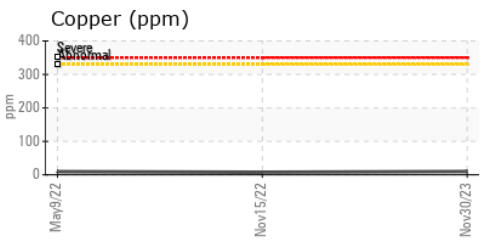
## GRAPHS

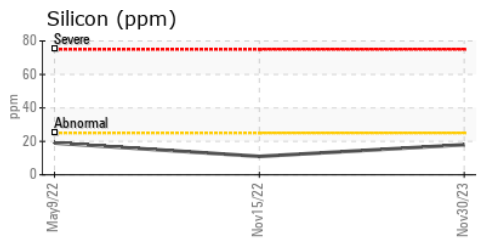


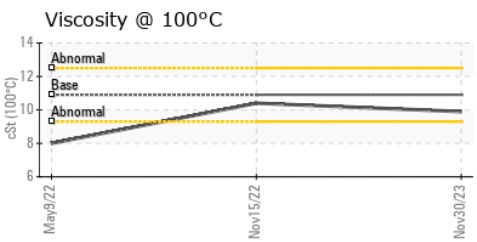



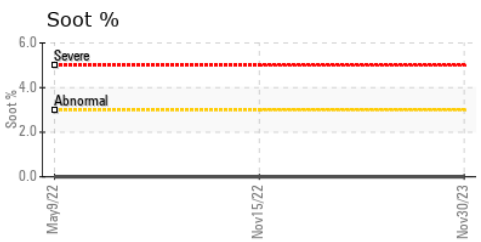




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 747 - GMA - Solid Waste**
**Sample No.** : GFL0096389 **Received** : 05 Dec 2023
**Lab Number** : 02600944 **Diagnosed** : 08 Dec 2023
**Unique Number** : 5694029 **Diagnostician** : Kevin Marson
**Test Package** : MOB 1 ( Additional Tests: BottomAnalysis, FILTERPATCH, Visual )

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Boucherville, QC
CA J4B 6Z5
Contact: Steve Voyer
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T:
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.*