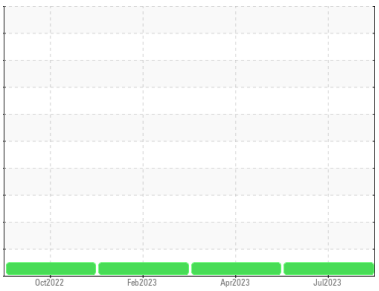
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**720034**
Component
**Diesel Engine**
Fluid
**MOBIL 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
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 | | **GFL0066194** | GFL0066203 | GFL0060369 |
| Sample Date | | Client Info | | **06 Jul 2023** | 26 Apr 2023 | 14 Feb 2023 |
| Machine Age | hrs | Client Info | | **500** | 500 | 500 |
| Oil Age | hrs | Client Info | | **500** | 500 | 500 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >110 | **12** | 9 | 12 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **3** | <1 | 5 |
| Lead | ppm | ASTM D5185m | >45 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >85 | **0** | 1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **6** | 8 | 15 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **63** | 64 | 64 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **977** | 901 | 866 |
| Calcium | ppm | ASTM D5185m | | **1140** | 1149 | 1179 |
| Phosphorus | ppm | ASTM D5185m | | **1018** | 1011 | 910 |
| Zinc | ppm | ASTM D5185m | | **1273** | 1253 | 1121 |
| Sulfur | ppm | ASTM D5185m | | **3380** | 2977 | 2992 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >30 | **2** | 3 | 5 |
| Sodium | ppm | ASTM D5185m | >118 | **1** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 3 | 3 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.5** | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.7** | 7.3 | 8.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.2** | 17.7 | 18.8 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.6** | 14.3 | 13.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.2** | 7.5 | 8.5 |

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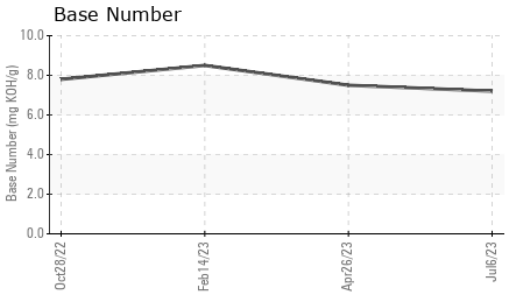
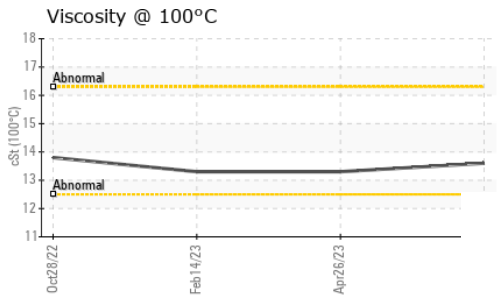


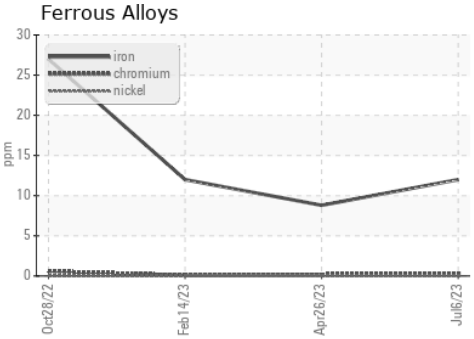




| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **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 |

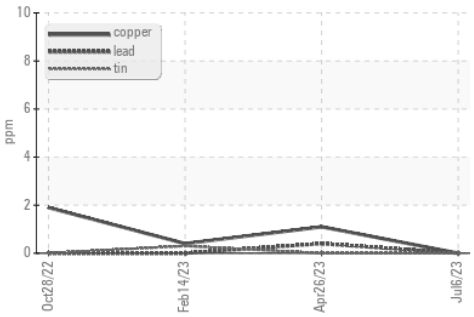
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.6** | 13.3 | 13.3 |

## GRAPHS

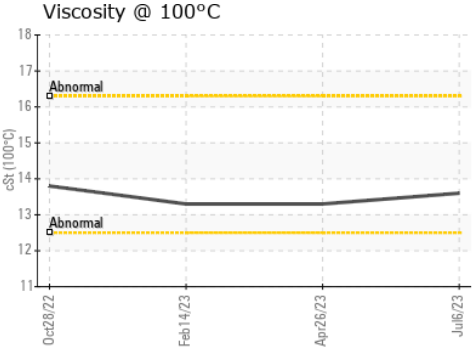
Ferrous Alloys



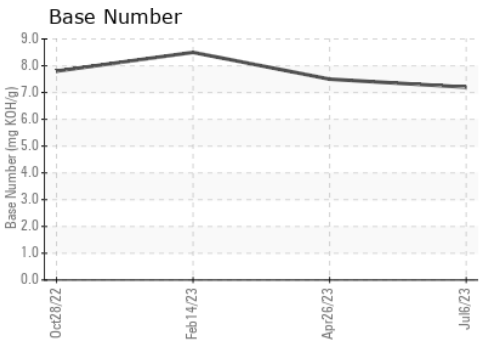

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0066194
**Lab Number** : 05896018
**Unique Number** : 10551828
**Test Package** : FLEET

**Received** : 12 Jul 2023
**Diagnosed** : 12 Jul 2023
**Diagnostician** : Wes Davis

**GFL Environmental - 904 - Chippewa Falls HC**
11888 & 11863 30th Avenue
Chippewa Falls, WI
US 54729
Contact: Andy Kane

T: (715)202-3420
F:

*To discuss this sample report, contact Customer Service at 1-800-237-1369.*
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*Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)*