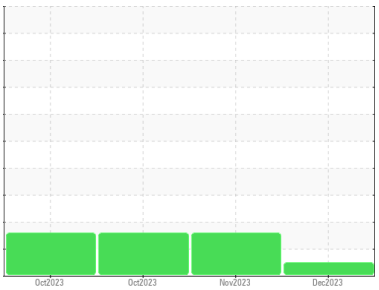
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**914031**
Component
**Diesel Engine**
Fluid
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**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 | | **GFL0103015** | GFL0103005 | GFL0098826 |
| Sample Date | | Client Info | | **18 Dec 2023** | 20 Nov 2023 | 24 Oct 2023 |
| Machine Age | hrs | Client Info | | **750** | 587 | 405 |
| Oil Age | hrs | Client Info | | **163** | 182 | 134 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | ABNORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| 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 D5185m | >100 | **7** | 39 | 33 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **2** | 3 | 2 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | 1 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **1** | 3 | 7 |
| Lead | ppm | ASTM D5185m | >40 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **35** | 262 | 185 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | 3 | 3 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | <1 |

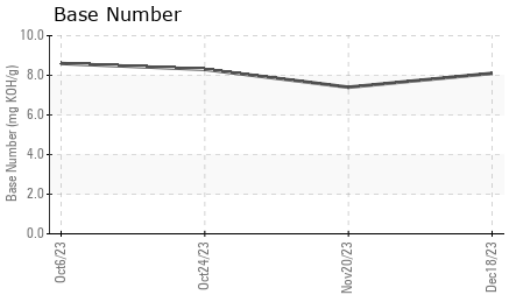
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **16** | 192 | 297 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **61** | 115 | 123 |
| Manganese | ppm | ASTM D5185m | | **1** | 4 | 3 |
| Magnesium | ppm | ASTM D5185m | | **936** | 734 | 694 |
| Calcium | ppm | ASTM D5185m | | **1052** | 1406 | 1350 |
| Phosphorus | ppm | ASTM D5185m | | **1102** | 675 | 713 |
| Zinc | ppm | ASTM D5185m | | **1252** | 853 | 825 |
| Sulfur | ppm | ASTM D5185m | | **3131** | 2490 | 2577 |

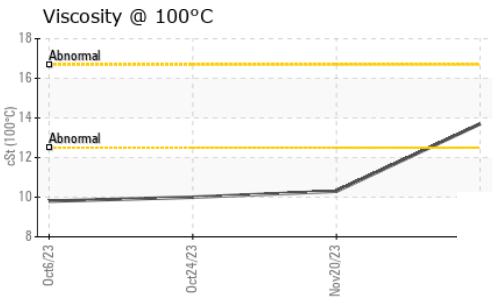
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **9** | ▲ 74 | ▲ 82 |
| Sodium | ppm | ASTM D5185m | | **3** | 0 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 5 | 5 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.2** | 0.3 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **6.1** | 9.4 | 8.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.6** | 23.9 | 24.4 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **14.8** | 22.0 | 21.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **8.1** | 7.4 | 8.3 |

# OIL ANALYSIS REPORT

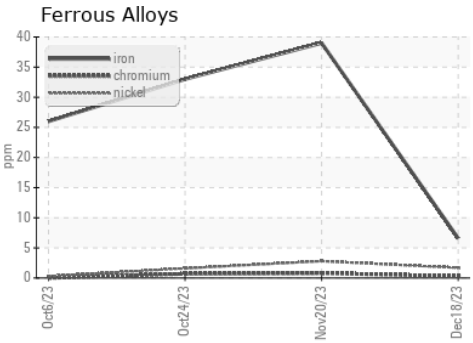


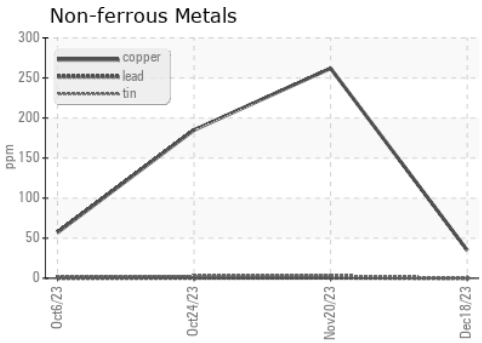



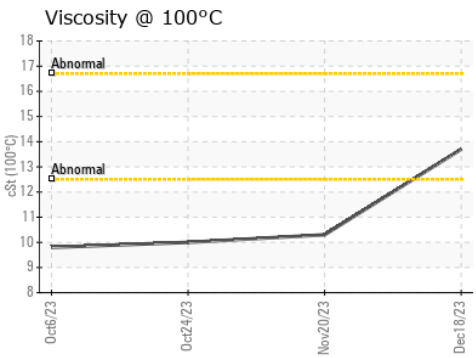

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

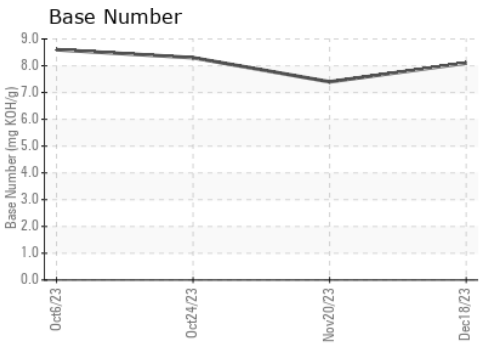
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.7** | 10.3 | 10.0 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0103015
**Lab Number** : 06043764
**Unique Number** : 10804372
**Test Package** : FLEET

**Recieved** : 22 Dec 2023
**Diagnosed** : 26 Dec 2023
**Diagnostician** : Wes Davis

*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)*

**GFL Environmental - 814 - Little Rock Hauling**
4005 Hwy 161 N.
LIttle Rock, AR
US 72117
Contact: Michael Lovin
mlovin@gflenv.com
T:
F:

Report Id: GFL814 [WUSCAR] 06043764 (Generated: 12/26/2023 16:43:56) Rev: 2

Submitted By: Nicole Walls