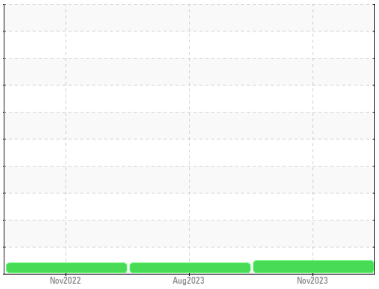
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## 911051 PETERBILT 320
Component
**1 Diesel Engine**
Fluid
**TIER ONE 15W40 (--- GAL)**

## 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 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 | | **GFL0102207** | GFL0061454 | GFL0061452 |
| Sample Date | | Client Info | | **14 Nov 2023** | 09 Aug 2023 | 30 Nov 2022 |
| Machine Age | hrs | Client Info | | **3134** | 2490 | 737 |
| Oil Age | hrs | Client Info | | **600** | 94 | 711 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **NORMAL** | ATTENTION | ATTENTION |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | 0.6 |
| 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 | **3** | 12 | 49 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | 4 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **1** | 6 | 24 |
| Lead | ppm | ASTM D5185m | >40 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **<1** | 3 | 83 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **7** | 4 | 39 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 1 |
| Molybdenum | ppm | ASTM D5185m | | **52** | 59 | 7 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 2 |
| Magnesium | ppm | ASTM D5185m | | **881** | 985 | 741 |
| Calcium | ppm | ASTM D5185m | | **1047** | 1299 | 1421 |
| Phosphorus | ppm | ASTM D5185m | | **931** | 1099 | 747 |
| Zinc | ppm | ASTM D5185m | | **1195** | 1405 | 852 |
| Sulfur | ppm | ASTM D5185m | | **2977** | 4114 | 3429 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **3** | 3 | 13 |
| Sodium | ppm | ASTM D5185m | | **2** | 1 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 10 | 62 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.2** | 0.3 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **6.1** | 8.4 | 10.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.3** | 19.1 | 22.6 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **13.9** | 15.0 | 17.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **9.1** | 8.1 | 6.8 |

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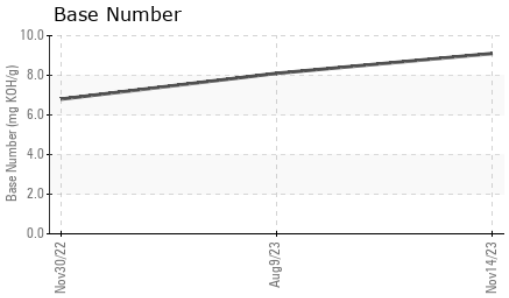
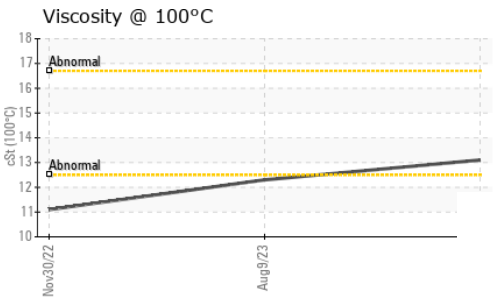
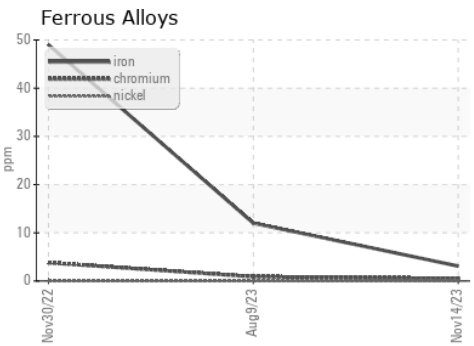


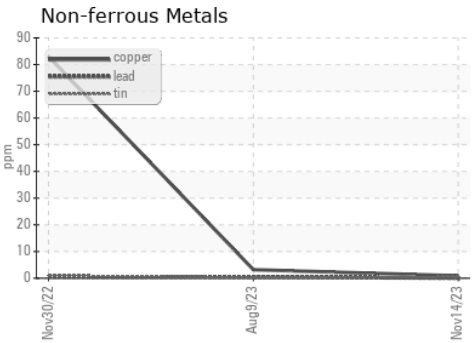



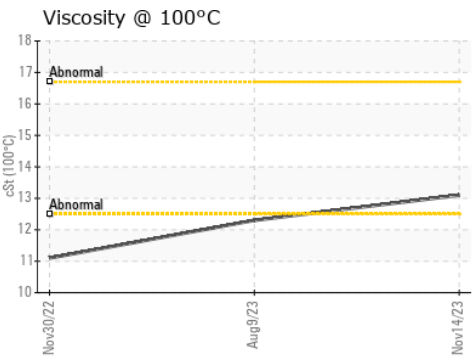

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

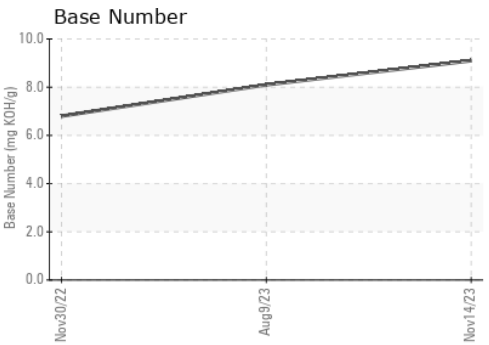
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.1** | ▲ 12.3 | ▲ 11.1 |

## GRAPHS





**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0102207
**Lab Number** : 06013042
**Unique Number** : 10752186
**Test Package** : FLEET

**Received** : 20 Nov 2023
**Diagnosed** : 21 Nov 2023
**Diagnostician** : Wes Davis

Certificate L2367

**GFL Environmental - 642- Grand Rapids Hauling**
5826 Alden Nash Ave SE
Lowell, MI
US 49331
Contact: Josh Arnett
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T:
F:


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