



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Area
GFL035
Machine Id
10998
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (8 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0116420 | GFL0085225 | GFL0102305 |
| Sample Date | | Client Info | | 12 Apr 2024 | 04 Jan 2024 | 22 Dec 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 600 | 600 | 600 |
| Filter Age | hrs | Client Info | | 0 | 600 | 600 |
| Oil Changed | | Client Info | | Not Chngd | Changed | Changed |
| Filter Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | NORMAL | ABNORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >80 | 39 | 9 | 22 |
| Chromium | ppm | ASTM D5185m | >5 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >30 | 6 | 3 | 3 |
| Lead | ppm | ASTM D5185m | >30 | 9 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >150 | 1 | 0 | <1 |
| Tin | ppm | ASTM D5185m | >5 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

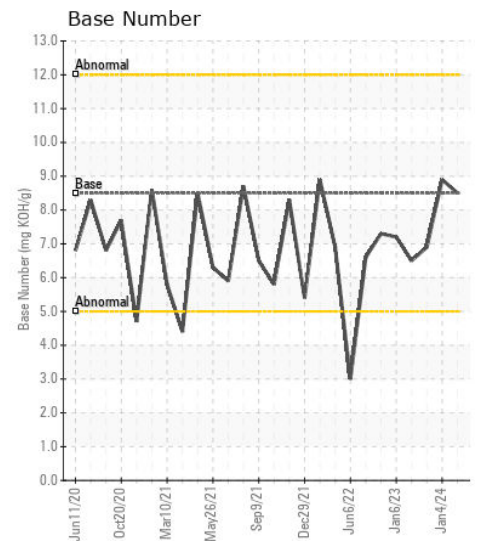
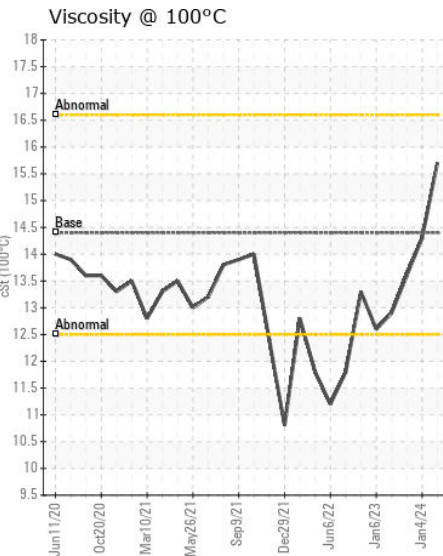
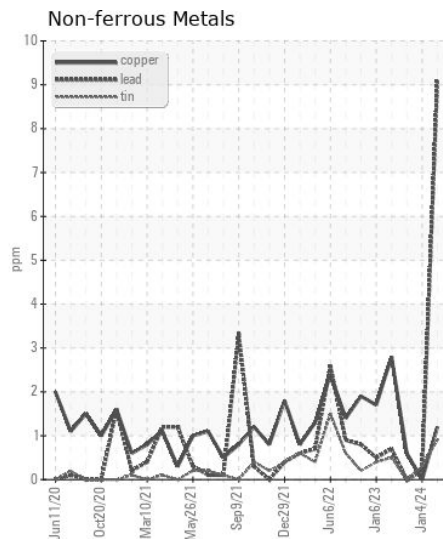
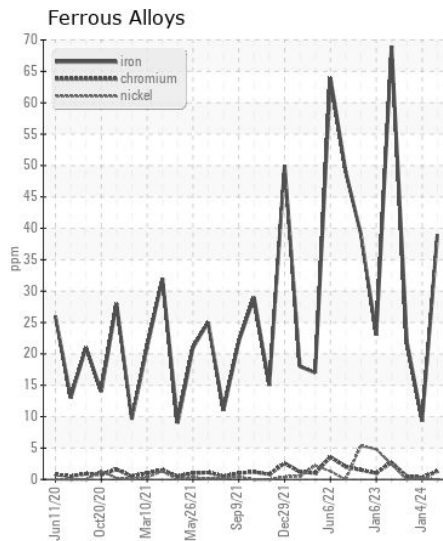
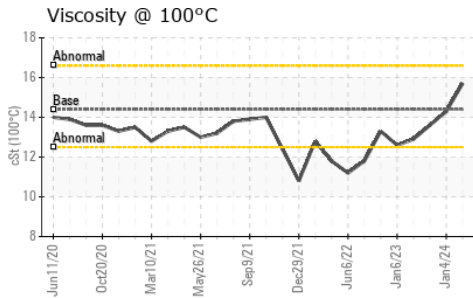
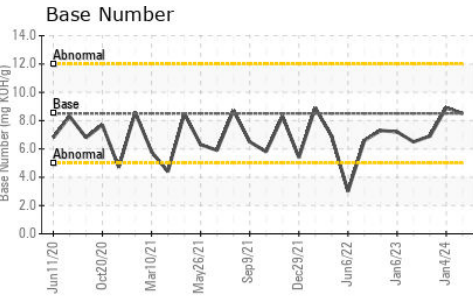
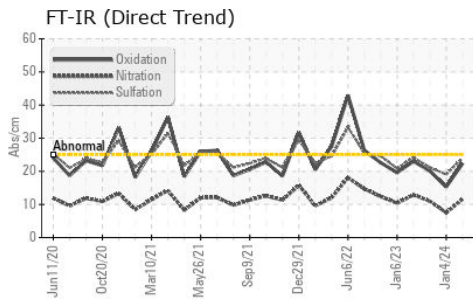
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >20 | 6 | 5 | 8 |
| Potassium | ppm | ASTM D5185m | >20 | 13 | ▲ 84 | 49 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.3 | 0.2 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.6 | 7.5 | 11.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.0 | 19.0 | 21.2 |
| 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 |

FLUID CONDITION

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

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | >216 | 7 | 28 | 22 |
| Boron | ppm | ASTM D5185m | 250 | 3 | 5 | 6 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 77 | 62 | 49 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 450 | 1306 | 935 | 843 |
| Calcium | ppm | ASTM D5185m | 3000 | 1472 | 1092 | 1093 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1434 | 1107 | 853 |
| Zinc | ppm | ASTM D5185m | 1350 | 1718 | 1274 | 1146 |
| Sulfur | ppm | ASTM D5185m | 4250 | 4047 | 3127 | 2643 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 22.4 | 15.3 | 20.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 8.5 | 8.9 | 6.9 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 15.7 | 14.3 | 13.6 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116420
Lab Number : 06150033
Unique Number : 10980111
Test Package : FLEET
Received : 16 Apr 2024
Tested : 17 Apr 2024
Diagnosed : 18 Apr 2024 - Sean Felton

GFL Environmental - 035 - Greensboro
 1236 Elon Place
 High Point, NC
 US 27263
 Contact: JORGE COSTA
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 T: (336)668-3712
 F:

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)