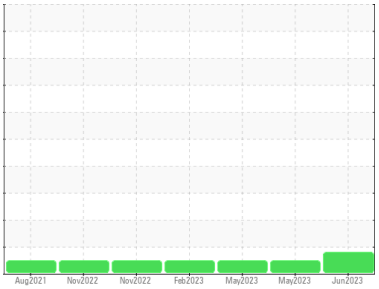
# PROBLEM SUMMARY

Sample Rating Trend

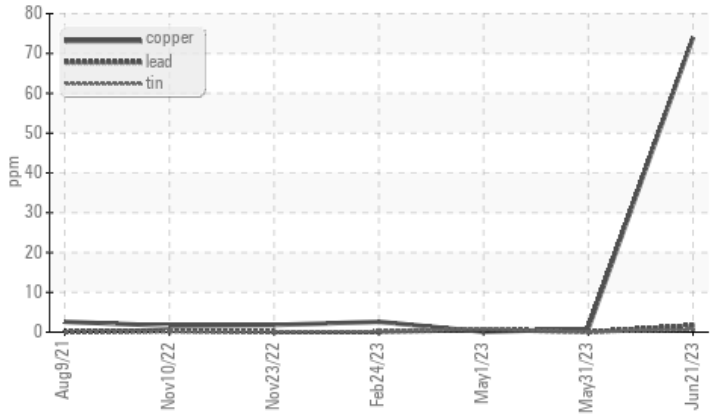



**WEAR**

Machine Id
**929054-182539**
Component
**Diesel Engine**
Fluid
**CHEVRON DELO 400 MULTIGRADE 15W40 (--- LTR)**

## COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals




## RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |
| Copper | ppm | ASTM D5185m | >85 | ▲ **74** | <1 | <1 |

**Customer Id:** GFL867
**Sample No.:** GFL0045426
**Lab Number:** 05885385
**Test Package:** FLEET

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**31 May 2023 Diag: Wes Davis**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**01 May 2023 Diag: Wes Davis**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**24 Feb 2023 Diag: Wes Davis**

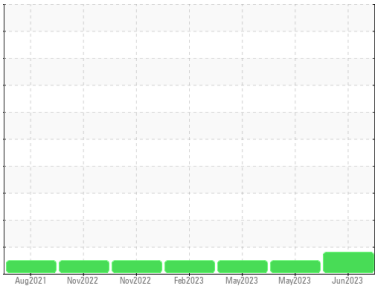
NORMAL

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Machine Id
**929054-182539**
Component
**Diesel Engine**
Fluid
**CHEVRON DELO 400 MULTIGRADE 15W40 (--- LTR)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**
The copper level is abnormal. All other 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 | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0045426** | GFL0071659 | GFL0051143 |
| Sample Date | | Client Info | | **21 Jun 2023** | 31 May 2023 | 01 May 2023 |
| Machine Age | hrs | Client Info | | **10283** | 10157 | 10011 |
| Oil Age | hrs | Client Info | | **126** | 3083 | 2937 |
| Oil Changed | | Client Info | | **N/A** | Changed | Not Changd |
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >110 | **14** | 7 | 6 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >25 | **6** | 4 | 1 |
| Lead | ppm | ASTM D5185m | >45 | **2** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >85 | ▲ **74** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **<1** | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 151 | **158** | 184 | 161 |
| Barium | ppm | ASTM D5185m | 0.4 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 250 | **81** | 96 | 91 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | **742** | 795 | 785 |
| Calcium | ppm | ASTM D5185m | 2046 | **1744** | 1410 | 1271 |
| Phosphorus | ppm | ASTM D5185m | 1043 | **778** | 887 | 878 |
| Zinc | ppm | ASTM D5185m | 943 | **1267** | 1025 | 1046 |
| Sulfur | ppm | ASTM D5185m | 5012 | **3535** | 3267 | 3451 |

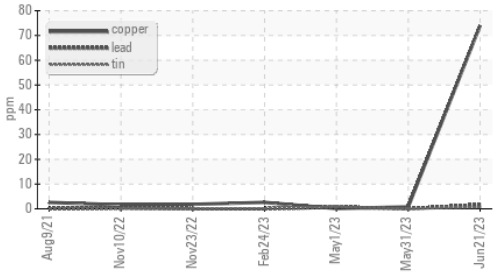
| CONTAMINANTS | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >30 | **7** | 4 | 4 |
| Sodium | ppm | ASTM D5185m | | **4** | 2 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **17** | 0 | 3 |

| INFRA-RED | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.2** | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.3** | 6.3 | 5.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.2** | 21.4 | 20.4 |

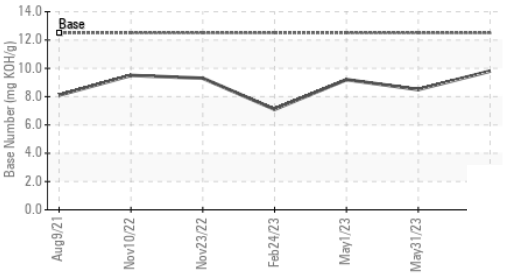
| FLUID DEGRADATION | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.9** | 15.4 | 14.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 12.5 | **9.8** | 8.5 | 9.2 |

# OIL ANALYSIS REPORT

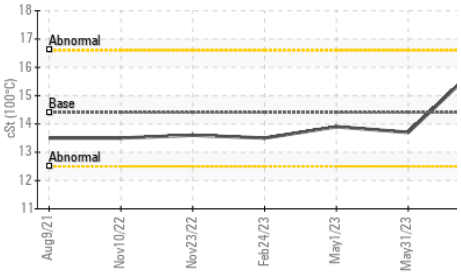
Non-ferrous Metals




Base Number




Viscosity @ 100°C

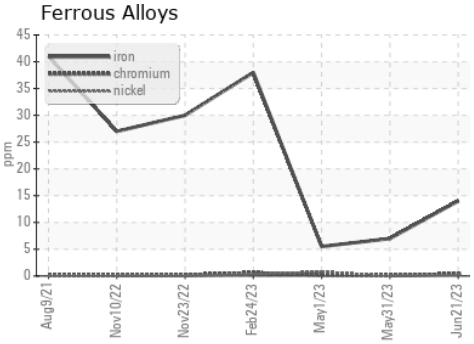



| VISUAL | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

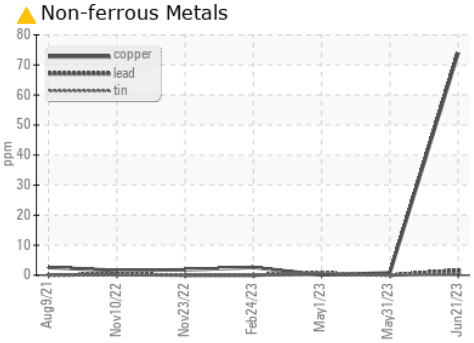
| FLUID PROPERTIES | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | **16.1** | 13.7 | 13.9 |

## GRAPHS

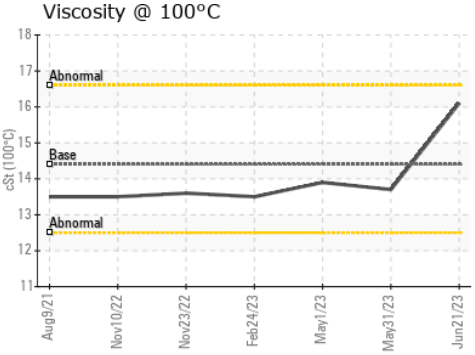
Ferrous Alloys



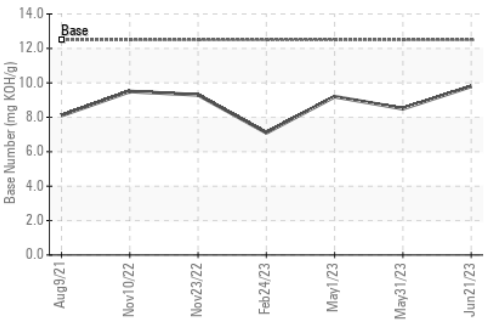

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0045426
**Lab Number** : 05885385
**Unique Number** : 10535868
**Test Package** : FLEET

**Received** : 28 Jun 2023
**Diagnosed** : 30 Jun 2023
**Diagnostician** : Don Baldridge

*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)*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