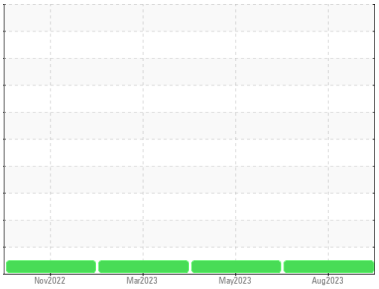
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**2312**
Component
**Diesel Engine**
Fluid
**CHEVRON 15W40 (--- GAL)**

## DIAGNOSIS

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

**Wear**
All component wear rates are normal.

**Contamination**
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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 | | **WC0829020** | PCA0085449 | PCA0085467 |
| Sample Date | | Client Info | | **08 Aug 2023** | 26 May 2023 | 14 Mar 2023 |
| Machine Age | mls | Client Info | | **75143** | 56354 | 38499 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >90 | **13** | 15 | 22 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 2 | 3 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **18** | 16 | 24 |
| Lead | ppm | ASTM D5185m | >40 | **2** | 3 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **1** | 2 | 8 |
| Tin | ppm | ASTM D5185m | >15 | **1** | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **183** | 212 | 181 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **120** | 121 | 106 |
| Manganese | ppm | ASTM D5185m | | **1** | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | | **663** | 657 | 624 |
| Calcium | ppm | ASTM D5185m | | **1531** | 1477 | 1477 |
| Phosphorus | ppm | ASTM D5185m | | **708** | 725 | 653 |
| Zinc | ppm | ASTM D5185m | | **866** | 854 | 791 |
| Sulfur | ppm | ASTM D5185m | | **3024** | 2954 | 2421 |

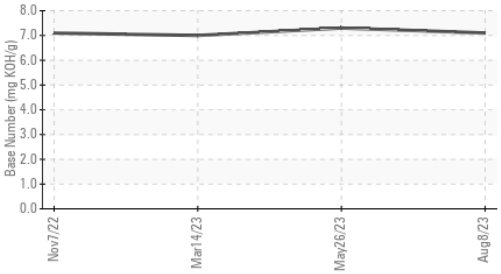
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **9** | 10 | 14 |
| Sodium | ppm | ASTM D5185m | >50 | **2** | 2 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **35** | 39 | 67 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >6 | **0.2** | 0.2 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.0** | 8.7 | 9.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **24.2** | 24.7 | 24.0 |

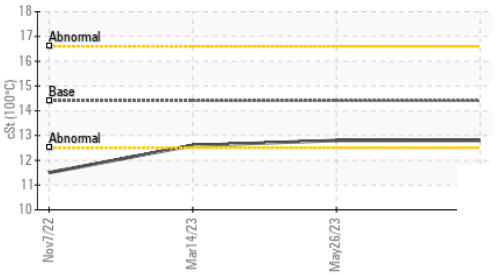
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.4** | 19.8 | 19.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.1** | 7.3 | 7.0 |

# OIL ANALYSIS REPORT

Base Number




Viscosity @ 100°C

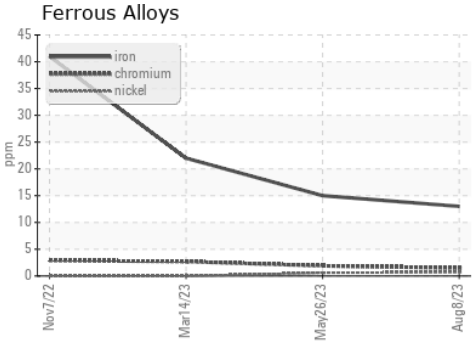



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

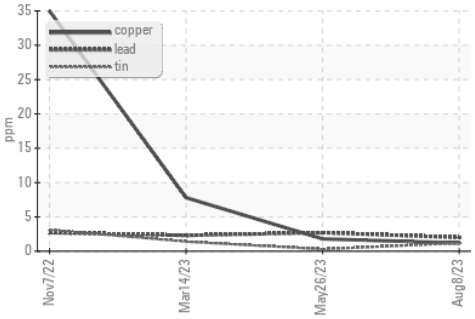
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | **12.8** | 12.8 | 12.6 |

## GRAPHS

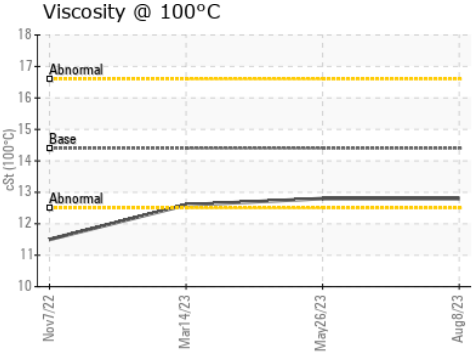
Ferrous Alloys



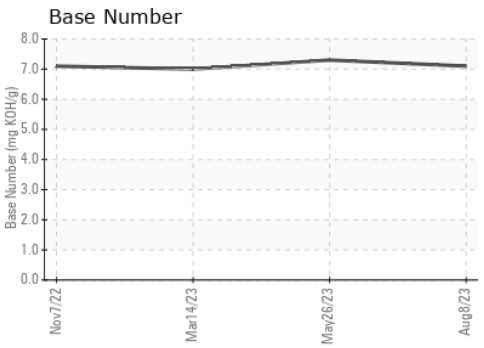

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0829020 **Received** : 11 Aug 2023
**Lab Number** : 05922717 **Diagnosed** : 13 Aug 2023
**Unique Number** : 10602664 **Diagnostician** : Wes Davis
**Test Package** : FLEET

*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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