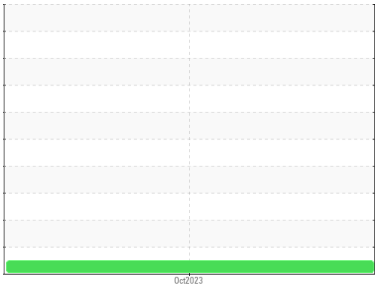
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## FREIGHTLINER DAIMLER T-27 (S/N 1FVACWDTXFHGN1573)
Component
**Diesel Engine**
Fluid
**SUPER LUBE TMS 15W40 NN6690 (--- QTS)**

## DIAGNOSIS

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

**Wear**
Metal levels are typical for a components first oil change.

**Contamination**
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**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 | | **WC0690577** | --- | --- |
| Sample Date | | Client Info | | **13 Oct 2023** | --- | --- |
| Machine Age | mls | Client Info | | **218717** | --- | --- |
| Oil Age | mls | Client Info | | **218717** | --- | --- |
| Oil Changed | | Client Info | | **Not Changd** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | --- | --- |
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >80 | **49** | --- | --- |
| Chromium | ppm | ASTM D5185m | >5 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185m | >2 | **0** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **4** | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >30 | **12** | --- | --- |
| Lead | ppm | ASTM D5185m | >30 | **0** | --- | --- |
| Copper | ppm | ASTM D5185m | >150 | **4** | --- | --- |
| Tin | ppm | ASTM D5185m | >5 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **8** | --- | --- |
| Barium | ppm | ASTM D5185m | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | **59** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185m | | **941** | --- | --- |
| Calcium | ppm | ASTM D5185m | | **1118** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | **1081** | --- | --- |
| Zinc | ppm | ASTM D5185m | | **1294** | --- | --- |
| Sulfur | ppm | ASTM D5185m | | **3360** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **5** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **3** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **8** | --- | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.4** | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.6** | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **20.8** | --- | --- |

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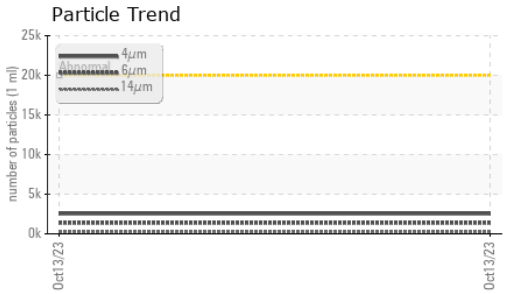
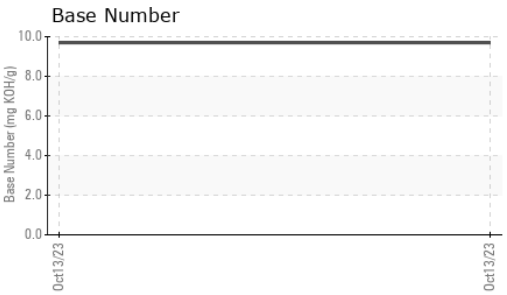
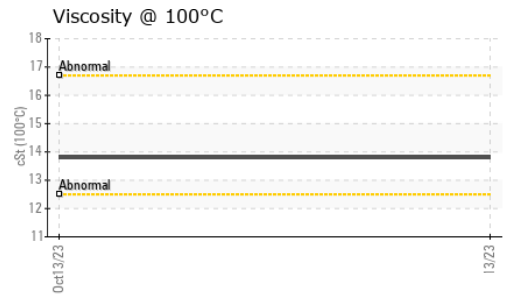
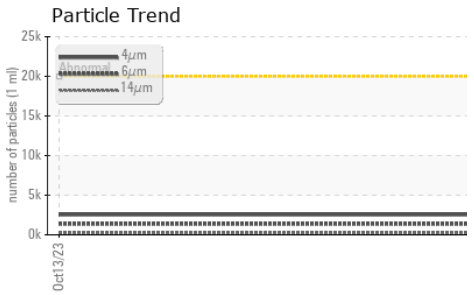


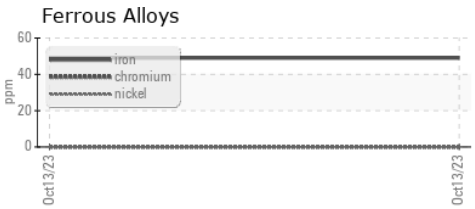

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | **2540** | --- | --- |
| Particles >6µm | | ASTM D7647 | >5000 | **1384** | --- | --- |
| Particles >14µm | | ASTM D7647 | >640 | **236** | --- | --- |
| Particles >21µm | | ASTM D7647 | >160 | **76** | --- | --- |
| Particles >38µm | | ASTM D7647 | >40 | **12** | --- | --- |
| Particles >71µm | | ASTM D7647 | >10 | **1** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | **19/18/15** | --- | --- |

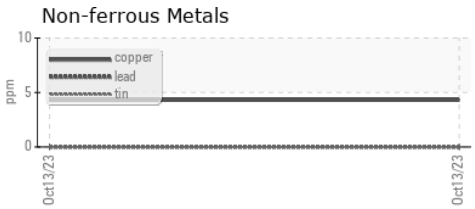
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.3** | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **9.70** | --- | --- |

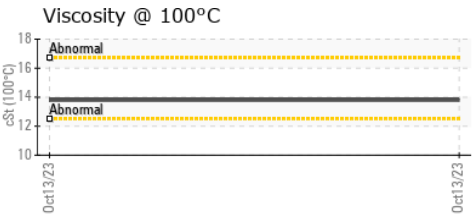
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt | scalar | *Visual | NONE | **NONE** | --- | --- |
| Debris | scalar | *Visual | NONE | **NONE** | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | --- | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | --- | --- |
| Odor | scalar | *Visual | NORML | **NORML** | --- | --- |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | --- | --- |
| Free Water | scalar | *Visual | | **NEG** | --- | --- |

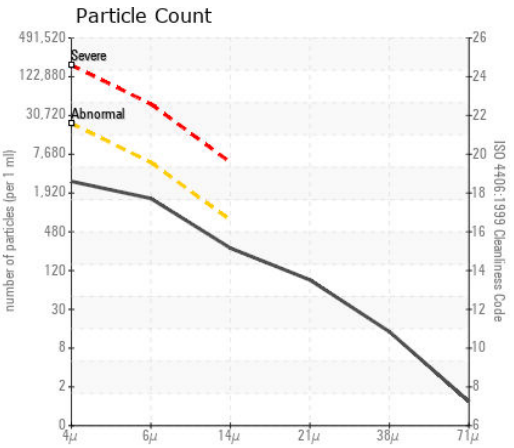
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.8** | --- | --- |

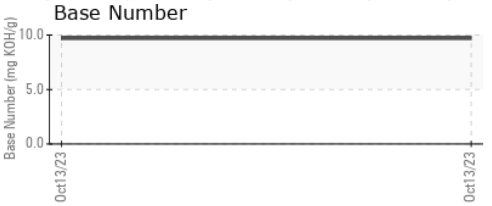
## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0690577 **Received** : 14 Nov 2023
**Lab Number** : 06007127 **Diagnosed** : 16 Nov 2023
**Unique Number** : 10740889 **Diagnostician** : Wes Davis
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

*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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