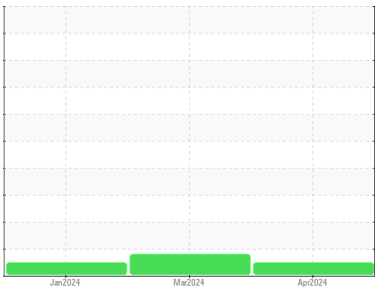
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**Action Newark**
Machine Id
**CATERPILLAR 5659**
Component
**Transmission (Manual)**
Fluid
**TDTO FLUID SAE 30 (--- 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 fluid.

**Fluid Condition**
The condition of the fluid is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0858466** | WC0889534 | WC0889569 |
| Sample Date | | Client Info | | **04 Apr 2024** | 22 Mar 2024 | 08 Jan 2024 |
| Machine Age | hrs | Client Info | | **3953** | 3847 | 10359 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | ABNORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >200 | **7** | 50 | 27 |
| Chromium | ppm | ASTM D5185m | >5 | **<1** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >7 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **2** | 3 | 2 |
| Lead | ppm | ASTM D5185m | >45 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >225 | **<1** | ▲ 226 | 16 |
| Tin | ppm | ASTM D5185m | >10 | **0** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 37 | **10** | 4 | 10 |
| Barium | ppm | ASTM D5185m | 7 | **0** | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | 5 | **52** | 5 | 2 |
| Manganese | ppm | ASTM D5185m | | **0** | 1 | 0 |
| Magnesium | ppm | ASTM D5185m | 40 | **765** | 24 | 86 |
| Calcium | ppm | ASTM D5185m | 2650 | **1126** | 2281 | 2690 |
| Phosphorus | ppm | ASTM D5185m | 1050 | **1058** | 985 | 999 |
| Zinc | ppm | ASTM D5185m | 1075 | **1170** | 1130 | 1294 |
| Sulfur | ppm | ASTM D5185m | 5750 | **3227** | 6562 | 7827 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >125 | **3** | 10 | 4 |
| Sodium | ppm | ASTM D5185m | | **<1** | 26 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 1 | 1 |

| 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

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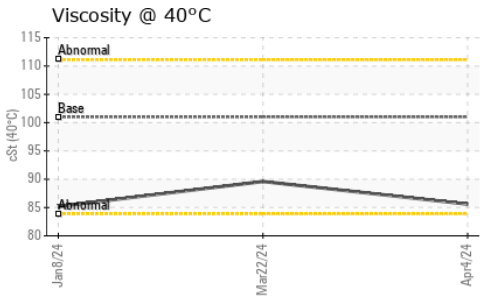
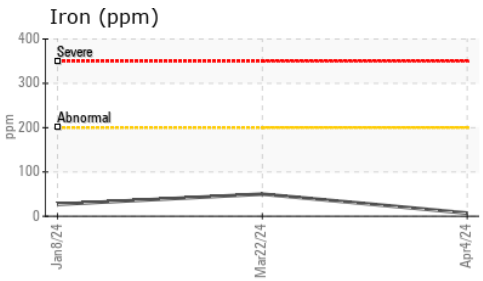
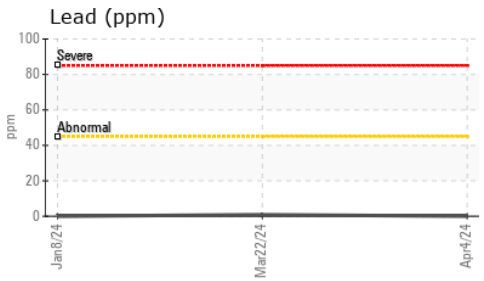


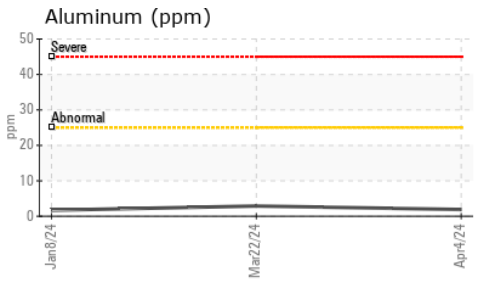

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 101 | **85.6** | 89.6 | 85.2 |

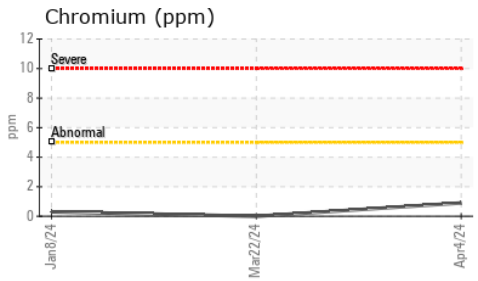
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | *no image* | *no image* | *no image* |
| Bottom | | | *no image* | *no image* | *no image* |

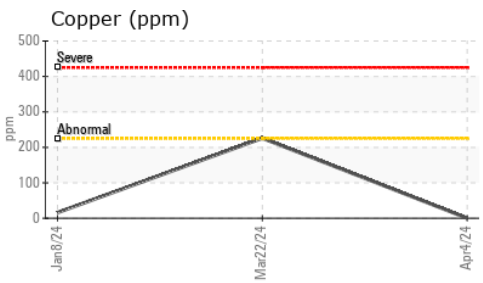
## GRAPHS

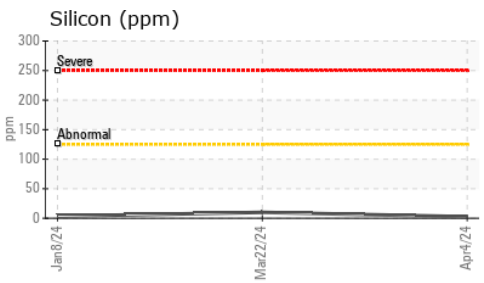


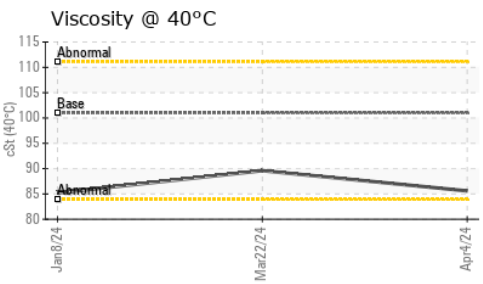



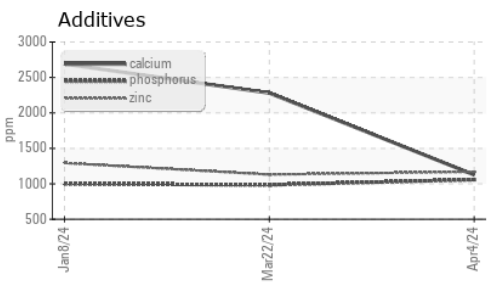




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0858466
**Lab Number** : 06151389
**Unique Number** : 10981467
**Test Package** : MOB 1

**Received** : 16 Apr 2024
**Tested** : 18 Apr 2024
**Diagnosed** : 19 Apr 2024 - Sean Felton

*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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