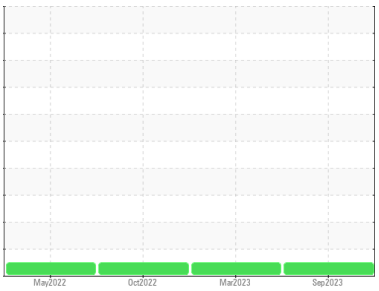
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**22202**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 10W30 (--- QTS)**

## 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 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 | | **WC0832044** | WC0784057 | WC0747817 |
| Sample Date | | Client Info | | **11 Sep 2023** | 11 Mar 2023 | 17 Oct 2022 |
| Machine Age | mls | Client Info | | **256700** | 178221 | 114329 |
| Oil Age | mls | Client Info | | **50000** | 50000 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **73** | 72 | 30 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | 1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **11** | 18 | 11 |
| Lead | ppm | ASTM D5185m | >40 | **0** | 0 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **6** | 5 | 4 |
| Tin | ppm | ASTM D5185m | >15 | **1** | 1 | <1 |
| 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 | 250 | **6** | 4 | 13 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **75** | 74 | 68 |
| Manganese | ppm | ASTM D5185m | | **1** | 2 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **1094** | 979 | 877 |
| Calcium | ppm | ASTM D5185m | 3000 | **1406** | 1346 | 1333 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1214** | 1104 | 903 |
| Zinc | ppm | ASTM D5185m | 1350 | **1551** | 1349 | 1205 |
| Sulfur | ppm | ASTM D5185m | 4250 | **3130** | 3607 | 3039 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **18** | 19 | 10 |
| Sodium | ppm | ASTM D5185m | | **3** | 4 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **19** | 39 | 22 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.8** | 0.7 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **16.9** | 14.4 | 12.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **32.3** | 27.7 | 27.6 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **34.2** | 27.8 | 23.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **3.6** | 3.3 | 6.8 |

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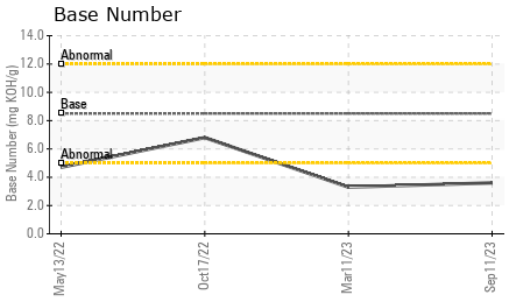
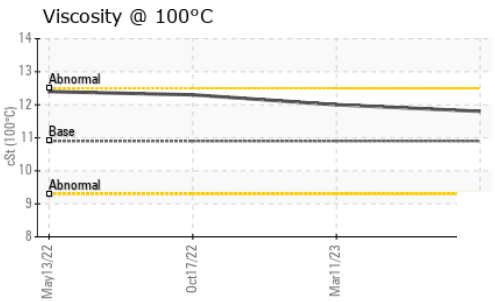
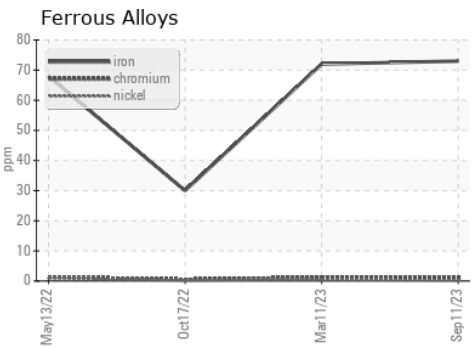


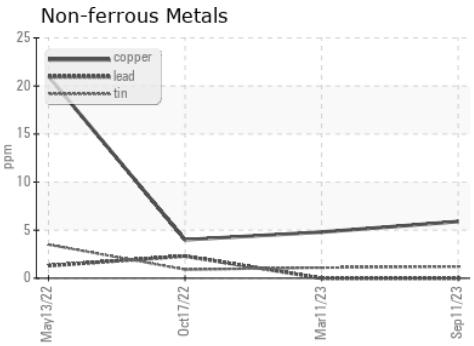



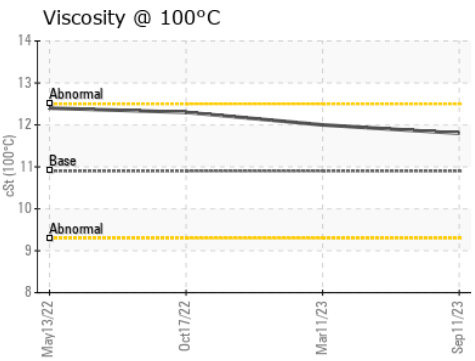

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

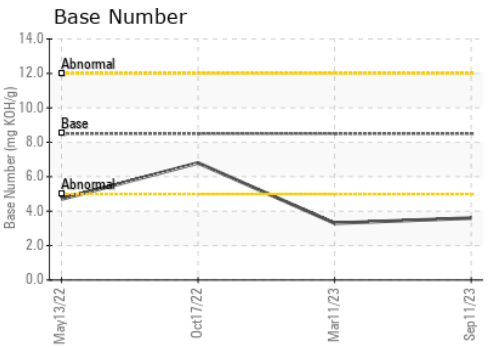
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 10.9 | **11.8** | 12.0 | 12.3 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0832044
**Lab Number** : 05999591
**Unique Number** : 10727951
**Test Package** : FLEET

**Received** : 06 Nov 2023
**Diagnosed** : 08 Nov 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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