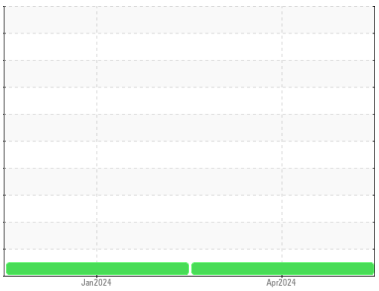
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## KENWROTH T880 5668 (S/N 1XKZDP9X8R361010)
Component
**Diesel Engine**
Fluid
**SHELL ROTELLA T 15W40 (--- 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 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 | | **WC0878857** | WC0878738 | --- |
| Sample Date | | Client Info | | **08 Apr 2024** | 25 Jan 2024 | --- |
| Machine Age | mls | Client Info | | **31296** | 21715 | --- |
| Oil Age | mls | Client Info | | **0** | 0 | --- |
| Oil Changed | | Client Info | | **N/A** | Changed | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | 0.5 | --- |
| Water | | WC Method | >0.2 | **NEG** | NEG | --- |
| Glycol | | WC Method | | **NEG** | NEG | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **34** | 59 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | --- |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | --- |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **15** | 40 | --- |
| Lead | ppm | ASTM D5185m | >40 | **<1** | <1 | --- |
| Copper | ppm | ASTM D5185m | >330 | **5** | 12 | --- |
| Tin | ppm | ASTM D5185m | >15 | **<1** | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 316 | **16** | 22 | --- |
| Barium | ppm | ASTM D5185m | 0.0 | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 1.2 | **24** | 16 | --- |
| Manganese | ppm | ASTM D5185m | | **<1** | 2 | --- |
| Magnesium | ppm | ASTM D5185m | 24 | **370** | 663 | --- |
| Calcium | ppm | ASTM D5185m | 2292 | **1895** | 1411 | --- |
| Phosphorus | ppm | ASTM D5185m | 1064 | **874** | 723 | --- |
| Zinc | ppm | ASTM D5185m | 1160 | **1013** | 919 | --- |
| Sulfur | ppm | ASTM D5185m | 4996 | **3501** | 2819 | --- |

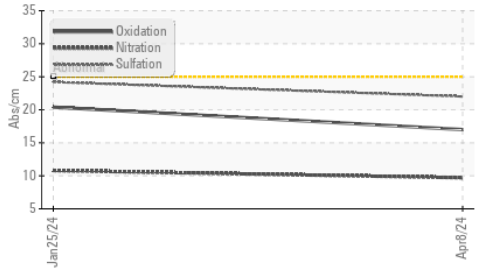
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **10** | 13 | --- |
| Sodium | ppm | ASTM D5185m | | **3** | 4 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **41** | 118 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.3** | 0.3 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.7** | 10.8 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.0** | 24.2 | --- |

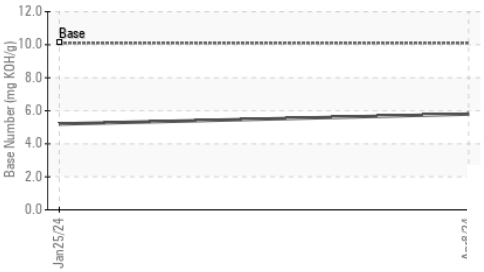
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.0** | 20.4 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | **5.8** | 5.2 | --- |

# OIL ANALYSIS REPORT

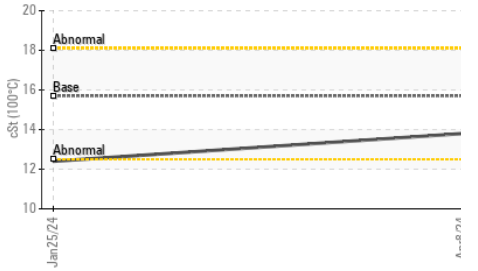
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

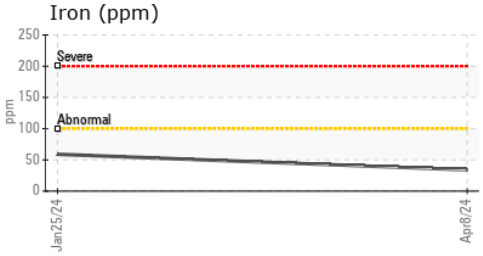



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt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

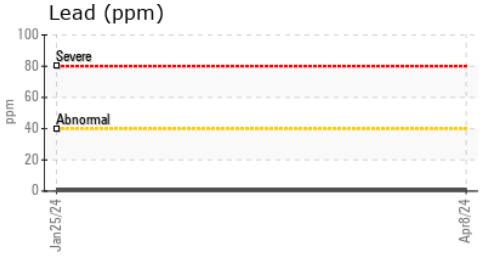
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | **13.8** | 12.4 | --- |

## GRAPHS

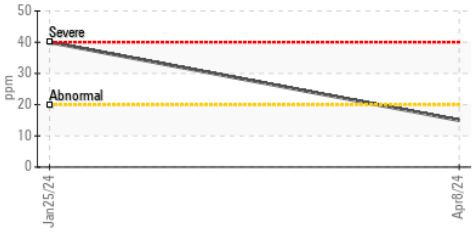
Iron (ppm)




Lead (ppm)

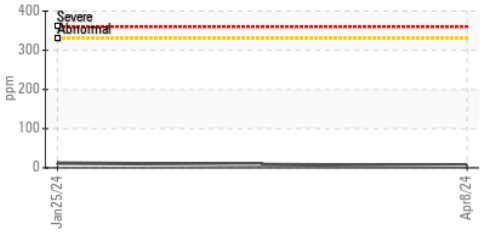



Aluminum (ppm)

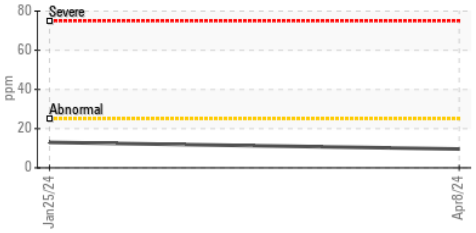



Chromium (ppm)

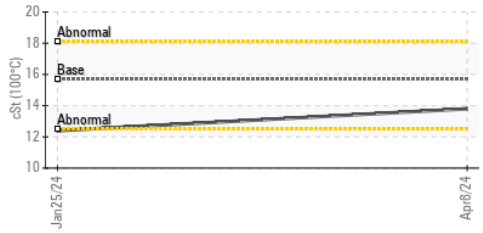

Copper (ppm)



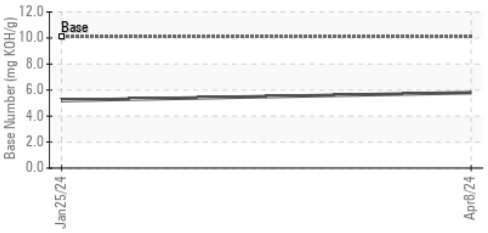

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0878857 **Received** : 12 Apr 2024
**Lab Number** : 06148004 **Tested** : 15 Apr 2024
**Unique Number** : 10978082 **Diagnosed** : 16 Apr 2024 - Don Baldridge
**Test Package** : MOB 1 ( Additional Tests: TBN )

*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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