



WEAR CHECK

OIL ANALYSIS REPORT

| | |
|-----------------|--------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
31940
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0829764 | WC0829401 | WC0710964 |
| Sample Date | | Client Info | | 06 Jun 2024 | 03 Aug 2023 | 20 Feb 2023 |
| Machine Age | mls | Client Info | | 0 | 145765 | 55049 |
| Oil Age | mls | Client Info | | 0 | 0 | 0 |
| Filter Age | mls | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 58 | 48 | 43 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 3 | 3 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 10 | 19 | 40 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 23 | 64 | 126 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

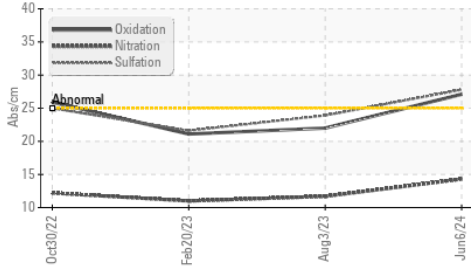
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 14 | 10 | 10 |
| Potassium | ppm | ASTM D5185m | >20 | 18 | 34 | 86 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 1.3 | 1 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 14.3 | 11.7 | 11.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 27.8 | 23.9 | 21.6 |
| 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 |

FLUID CONDITION

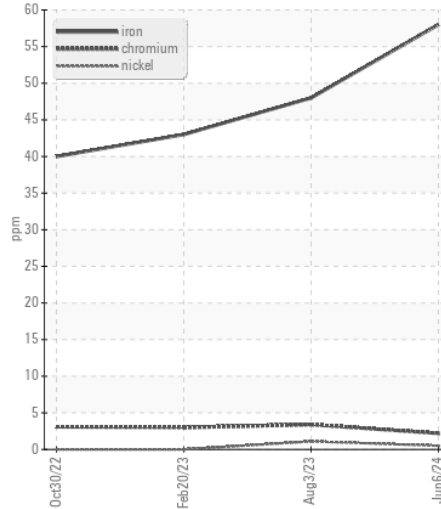
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | >216 | 3 | 2 | 2 |
| Boron | ppm | ASTM D5185m | 250 | 20 | <1 | 2 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 76 | 85 | 70 |
| Manganese | ppm | ASTM D5185m | | 2 | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | 450 | 1003 | 1259 | 1095 |
| Calcium | ppm | ASTM D5185m | 3000 | 1299 | 1481 | 1430 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1158 | 1292 | 1050 |
| Zinc | ppm | ASTM D5185m | 1350 | 1439 | 1616 | 1386 |
| Sulfur | ppm | ASTM D5185m | 4250 | 2955 | 3027 | 2526 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 27.1 | 22.0 | 21.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 5.2 | 5.9 | 6.2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 14.3 | 13.9 | 13.4 |

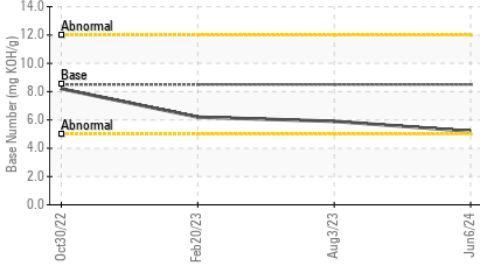
FT-IR (Direct Trend)



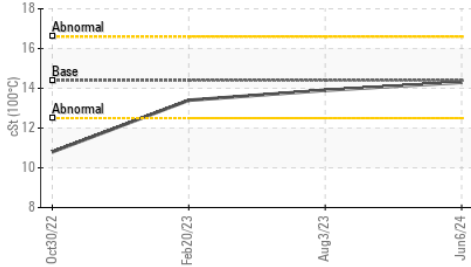
Ferrous Alloys



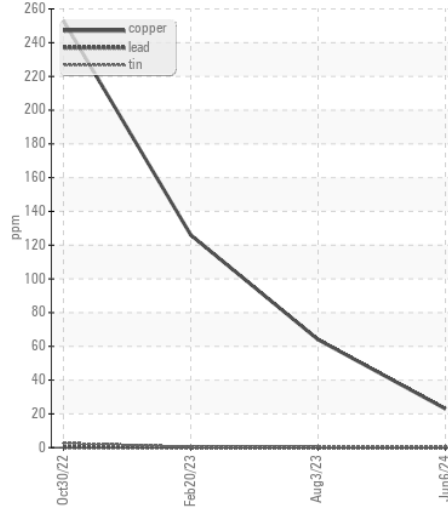
Base Number



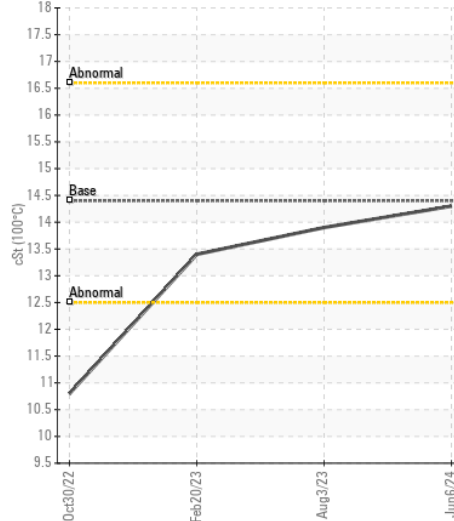
Viscosity @ 100°C



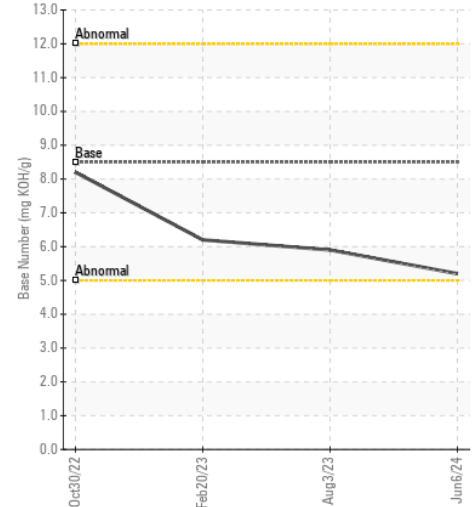
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0829764
Lab Number : 06217600
Unique Number : 11090464
Test Package : FLEET
Received : 21 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Don Baldrige

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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)