



OIL ANALYSIS REPORT

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

Machine Id
HC2079
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number | | Client Info | | WC0945843 | WC0875899 | --- |
| Sample Date | | Client Info | | 10 Jul 2024 | 22 Feb 2024 | --- |
| Machine Age | mls | Client Info | | 1589 | 129584 | --- |
| Oil Age | mls | Client Info | | 100 | 10000 | --- |
| Filter Age | mls | Client Info | | 100 | 10000 | --- |
| Oil Changed | | Client Info | | Changed | Changed | --- |
| Filter Changed | | Client Info | | Changed | Changed | --- |
| Sample Status | | | | ATTENTION | SEVERE | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|-----|
| Iron | ppm | ASTM D5185m | >100 | 9 | 63 | --- |
| Chromium | ppm | ASTM D5185m | >20 | 0 | 2 | --- |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | --- |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | 2 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 3 | --- |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | --- |
| Copper | ppm | ASTM D5185m | >330 | <1 | 2 | --- |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |

CONTAMINATION

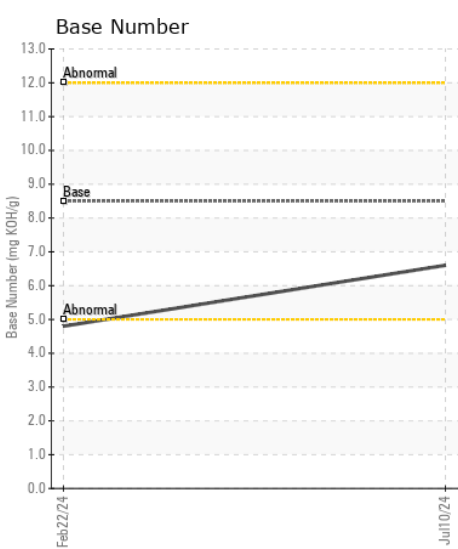
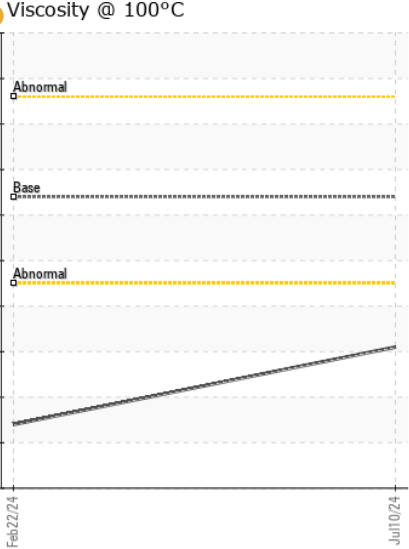
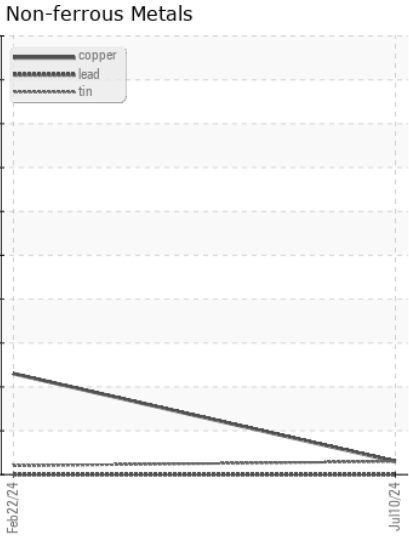
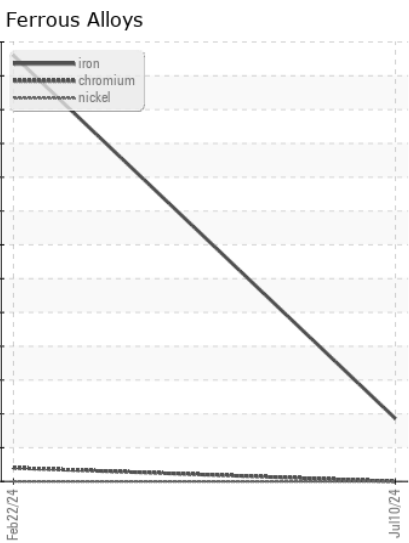
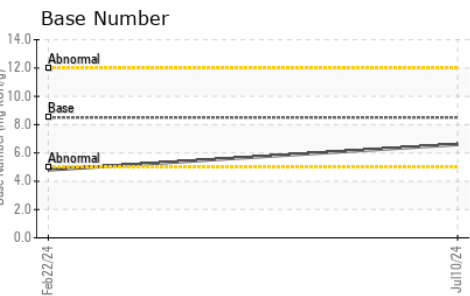
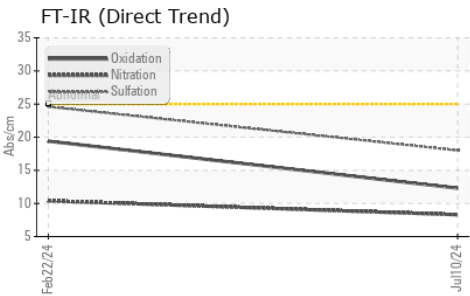
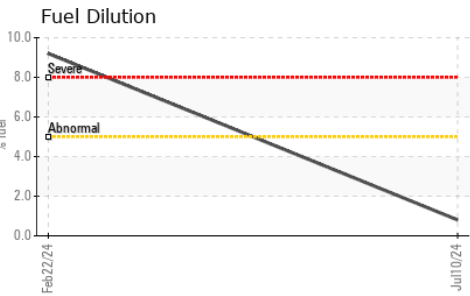
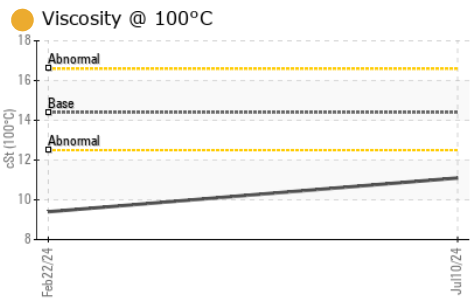
Fuel content negligible. There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-----|
| Silicon | ppm | ASTM D5185m | >25 | 5 | 9 | --- |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 1 | --- |
| Fuel | % | ASTM D3524 | >5 | 0.8 | ▲ 9.2 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 1.1 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.3 | 10.4 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.0 | 24.6 | --- |
| 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 | --- |

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| | | | | | | |
|------------------|----------|-------------|------|---------------|-------|-----|
| Sodium | ppm | ASTM D5185m | >158 | 3 | 4 | --- |
| Boron | ppm | ASTM D5185m | 250 | 17 | 9 | --- |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 100 | 36 | 20 | --- |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | --- |
| Magnesium | ppm | ASTM D5185m | 450 | 158 | 121 | --- |
| Calcium | ppm | ASTM D5185m | 3000 | 2147 | 1793 | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1013 | 808 | --- |
| Zinc | ppm | ASTM D5185m | 1350 | 1159 | 933 | --- |
| Sulfur | ppm | ASTM D5185m | 4250 | 4060 | 2819 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 12.3 | 19.4 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 6.6 | 4.8 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | ● 11.1 | ▲ 9.4 | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0945843
Lab Number : 06237291
Unique Number : 11126125
Test Package : FLEET (Additional Tests: PercentFuel)

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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)