# OIL ANALYSIS REPORT

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

Machine Id
**46609**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

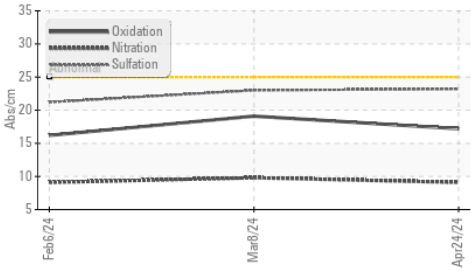
There is no indication of any contamination in the oil.

## FLUID CONDITION

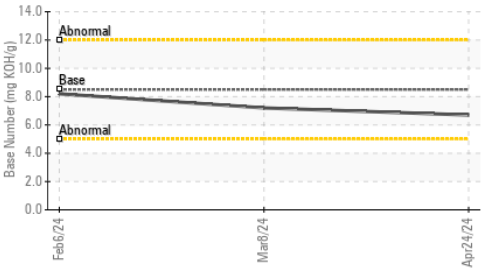
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0936291** | WC0879962 | WC0903427 |
| Sample Date | | Client Info | | **24 Apr 2024** | 08 Mar 2024 | 06 Feb 2024 |
| Machine Age | mls | Client Info | | **37814** | 168167 | 0 |
| Oil Age | mls | Client Info | | **0** | 25000 | 39320 |
| Filter Age | mls | Client Info | | **0** | 25000 | 39320 |
| Oil Changed | | Client Info | | **N/A** | Changed | Changed |
| Filter Changed | | Client Info | | **N/A** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |
| Iron | ppm | ASTM D5185m | >100 | **20** | 37 | 25 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | 5 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **5** | 37 | 11 |
| Lead | ppm | ASTM D5185m | >40 | **2** | <1 | 1 |
| Copper | ppm | ASTM D5185m | >330 | **27** | 15 | ▲ 226 |
| Tin | ppm | ASTM D5185m | >15 | **1** | 1 | 1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | **10** | 8 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | **21** | 84 | 30 |
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | % | *ASTM D2982 | | **NEG** | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | **1** | 1.1 | 1.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.1** | 9.8 | 9.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **23.2** | 23.0 | 21.2 |
| 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 |
| Sodium | ppm | ASTM D5185m | >158 | **12** | <1 | 0 |
| Boron | ppm | ASTM D5185m | 250 | **262** | 10 | 4 |
| Barium | ppm | ASTM D5185m | 10 | **0** | <1 | 1 |
| Molybdenum | ppm | ASTM D5185m | 100 | **63** | 82 | 73 |
| Manganese | ppm | ASTM D5185m | | **<1** | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | 450 | **296** | 1013 | 964 |
| Calcium | ppm | ASTM D5185m | 3000 | **1747** | 1168 | 1359 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **950** | 1051 | 1131 |
| Zinc | ppm | ASTM D5185m | 1350 | **1273** | 1275 | 1345 |
| Sulfur | ppm | ASTM D5185m | 4250 | **3456** | 2594 | 3475 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.2** | 19.1 | 16.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **6.7** | 7.2 | 8.2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | **13.8** | 13.9 | 13.1 |

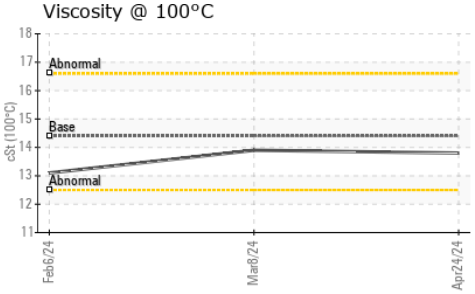
FT-IR (Direct Trend)



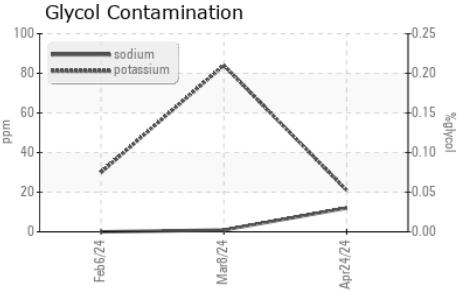

Base Number



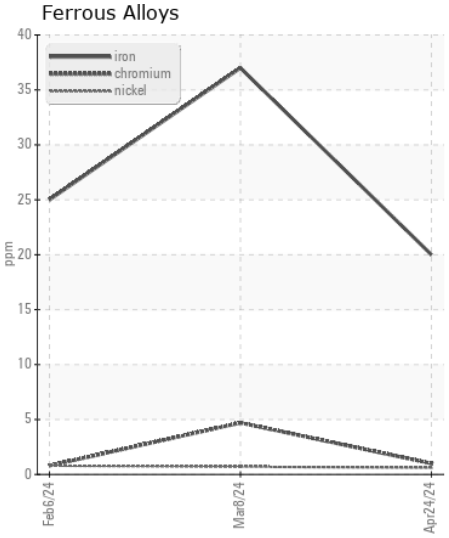

Viscosity @ 100°C



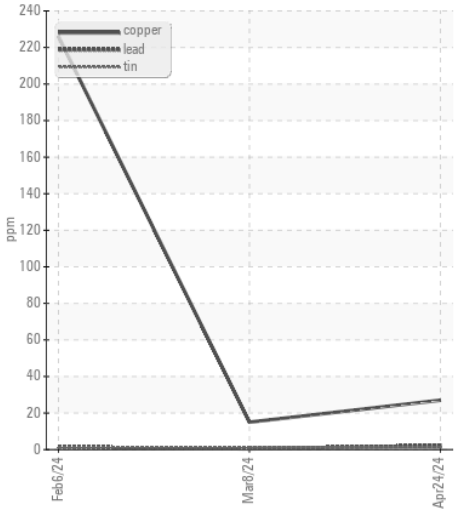

Glycol Contamination



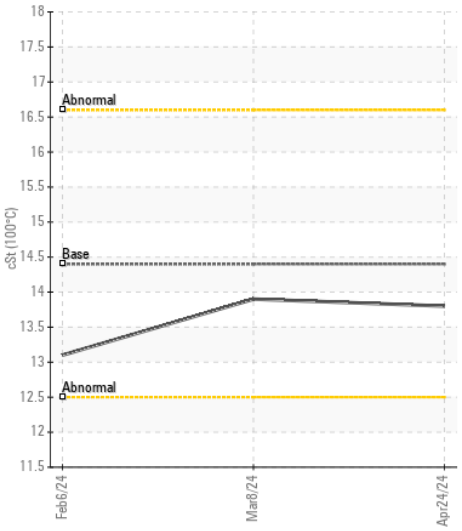

Ferrous Alloys



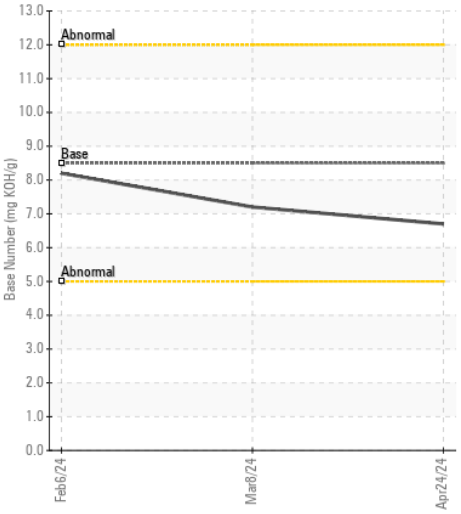

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0936291
**Lab Number** : 06190045
**Unique Number** : 11046797
**Test Package** : FLEET ( Additional Tests: Glycol )

**Received** : 23 May 2024
**Tested** : 30 May 2024
**Diagnosed** : 30 May 2024 - Jonathan Hester

*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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