



OIL ANALYSIS REPORT

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

Machine Id
3234
 Component
Diesel Engine
 Fluid
SHELL 10W30 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0916529 | WC0878618 | WC0878593 |
| Sample Date | | Client Info | | 01 Jun 2024 | 02 Mar 2024 | 01 Dec 2023 |
| Machine Age | mls | Client Info | | 24843 | 400160 | 378265 |
| Oil Age | mls | Client Info | | 24843 | 21895 | 23863 |
| Filter Age | mls | Client Info | | 24843 | 21895 | 23863 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

Metal levels are typical for a new component breaking in.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 11 | 15 | 13 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 4 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 2 | 3 | 3 |
| Copper | ppm | ASTM D5185m | >330 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 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.

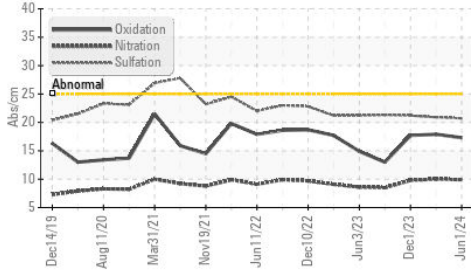
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 4 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 3 | 3 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.3 | 0.3 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.9 | 10.0 | 9.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.7 | 20.9 | 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 |

FLUID CONDITION

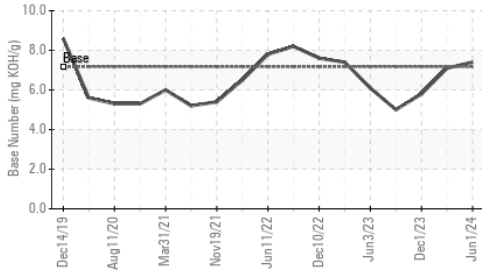
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 2 | 2 | 1 |
| Boron | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | | 60 | 65 | 53 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 470 | 1026 | 1044 | 854 |
| Calcium | ppm | ASTM D5185m | 1150 | 1149 | 1188 | 1176 |
| Phosphorus | ppm | ASTM D5185m | 94 | 1056 | 1154 | 1000 |
| Zinc | ppm | ASTM D5185m | 1030 | 1313 | 1359 | 1222 |
| Sulfur | ppm | ASTM D5185m | | 3528 | 3409 | 3331 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.3 | 17.9 | 17.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 7.17 | 7.4 | 7.1 | 5.8 |
| Visc @ 100°C | cSt | ASTM D445 | 10.90 | 11.3 | 11.4 | 11.3 |

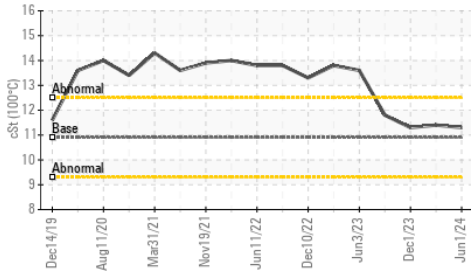
FT-IR (Direct Trend)



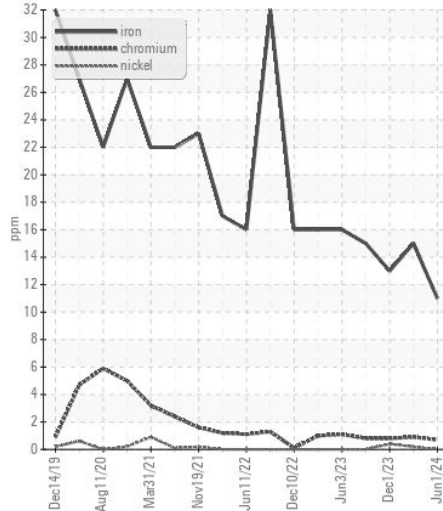
Base Number



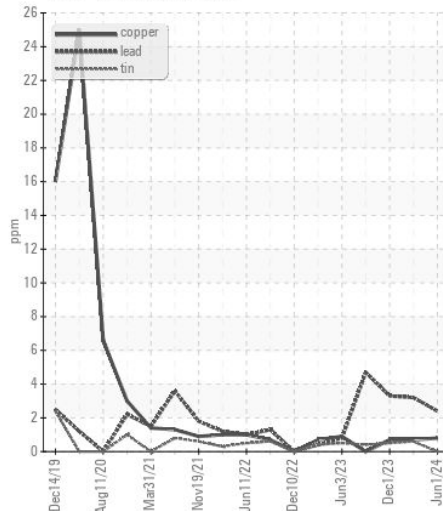
Viscosity @ 100°C



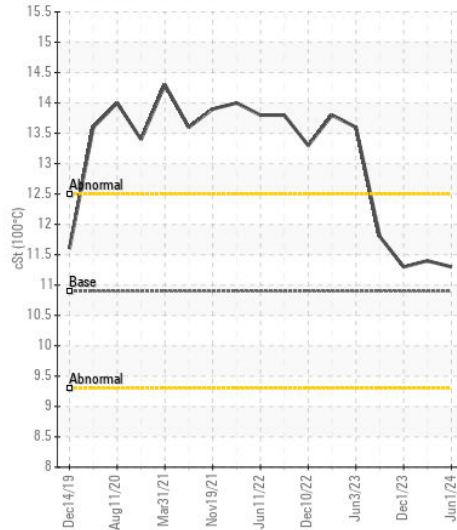
Ferrous Alloys



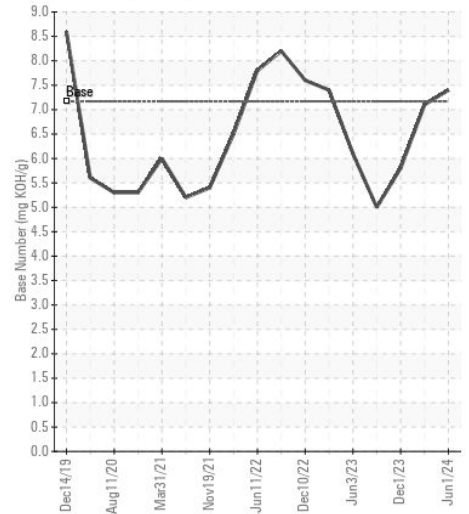
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0916529
Lab Number : 06211103
Unique Number : 11083967
Test Package : FLEET

CARCO TRANSPORTATION
 3403 EAST ROOSEVELT ROAD
 LITTLE ROCK, AR
 US 72206
 Contact: DENNIS CATES
 denniscales@carcotrans.com
 T: (800)967-0777
 F:

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)