FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Area
**(BD70517) {UNASSIGNED}**
Machine Id
**814037 MACK LR64R**
Component
**Diesel Engine**
Fluid
**TIER ONE 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

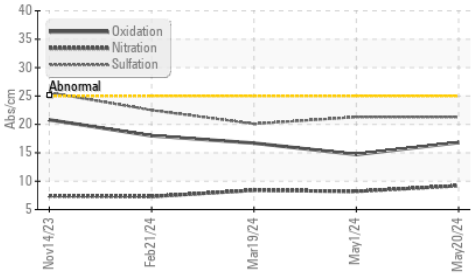
There is no indication of any contamination in the oil.

## FLUID CONDITION

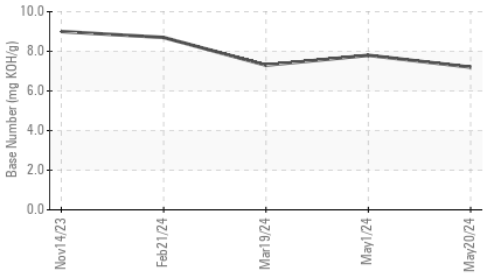
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0115303 | GFL0115296 | GFL0110990 |
| Sample Date | | Client Info | | 20 May 2024 | 01 May 2024 | 19 Mar 2024 |
| Machine Age | hrs | Client Info | | 1473 | 1342 | 1078 |
| Oil Age | hrs | Client Info | | 14 | 27 | 100 |
| Filter Age | hrs | Client Info | | 14 | 27 | 100 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | ATTENTION | ATTENTION |
| Iron | ppm | ASTM D5185m | >120 | 10 | 32 | 21 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 3 | 2 |
| Nickel | ppm | ASTM D5185m | >5 | 2 | <1 | 8 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | <1 | 3 |
| Silver | ppm | ASTM D5185m | >2 | <1 | <1 | 1 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 2 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 4 | 1 |
| Copper | ppm | ASTM D5185m | >330 | 56 | 30 | 241 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 6 | 7 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 9 | 3 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 0.6 | 1.3 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.2 | 8.2 | 8.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.3 | 21.3 | 20.1 |
| 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 | | <1 | 136 | 2 |
| Boron | ppm | ASTM D5185m | | 6 | 2 | 16 |
| Barium | ppm | ASTM D5185m | | <1 | 0 | 1 |
| Molybdenum | ppm | ASTM D5185m | | 55 | 60 | 63 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | | 821 | 923 | 849 |
| Calcium | ppm | ASTM D5185m | | 1063 | 1313 | 1143 |
| Phosphorus | ppm | ASTM D5185m | | 1026 | 1120 | 992 |
| Zinc | ppm | ASTM D5185m | | 1182 | 1349 | 1153 |
| Sulfur | ppm | ASTM D5185m | | 3003 | 3831 | 2687 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.8 | 14.7 | 16.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 7.2 | 7.8 | 7.3 |
| Visc @ 100°C | cSt | ASTM D445 | | 13.0 | 13.2 | 12.9 |

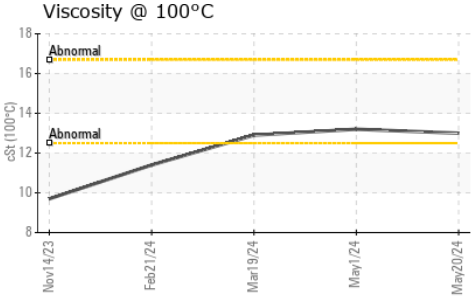
FT-IR (Direct Trend)



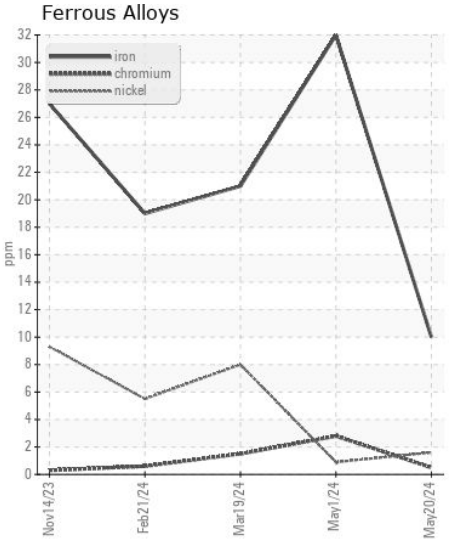

Base Number



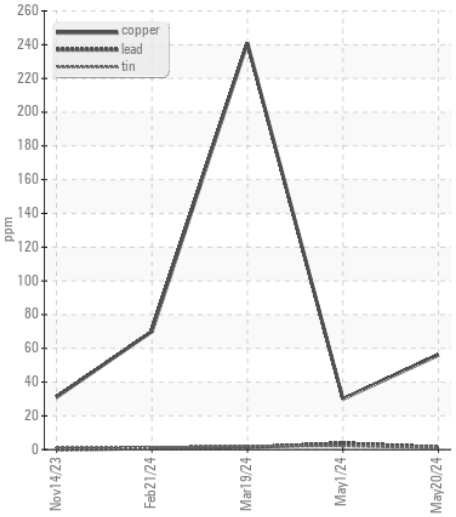

Viscosity @ 100°C



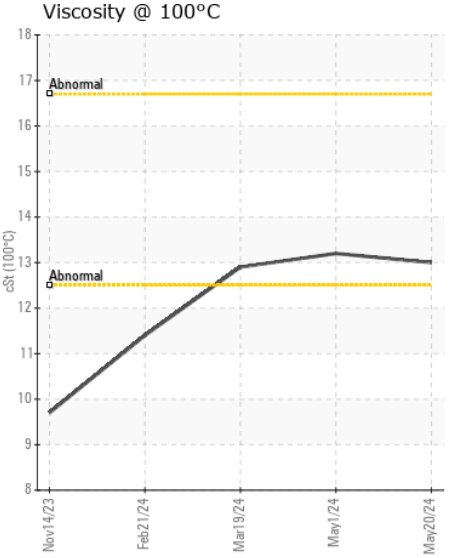

Ferrous Alloys



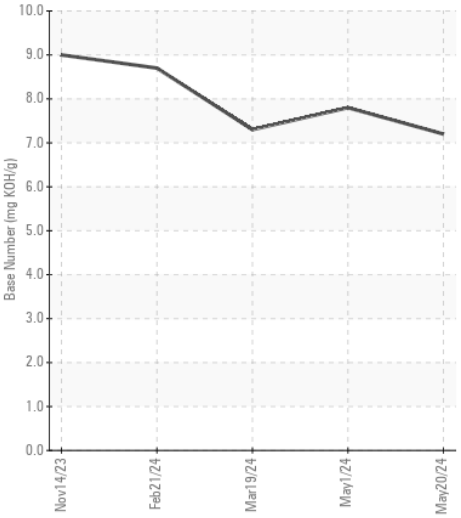

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0115303
**Lab Number** : 06189990
**Unique Number** : 11046742
**Test Package** : FLEET

**Received** : 23 May 2024
**Tested** : 31 May 2024
**Diagnosed** : 31 May 2024 - Wes Davis

*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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