



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



Machine Id
MACK 235091
Component
Diesel Engine
Fluid
{not provided} (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | LF0001603 | --- | --- |
| Sample Date | | Client Info | | 15 Jan 2024 | --- | --- |
| Machine Age | mls | Client Info | | 40525 | --- | --- |
| Oil Age | mls | Client Info | | 0 | --- | --- |
| Filter Age | mls | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | MARGINAL | --- | --- |

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|-----|-----|
| Iron | ppm | ASTM D5185m | >120 | 67 | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >5 | 2 | --- | --- |
| Titanium | ppm | ASTM D5185m | >2 | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | >2 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 33 | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | ▲ 295 | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | 4 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

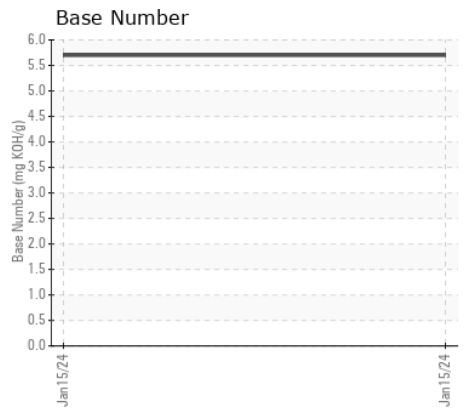
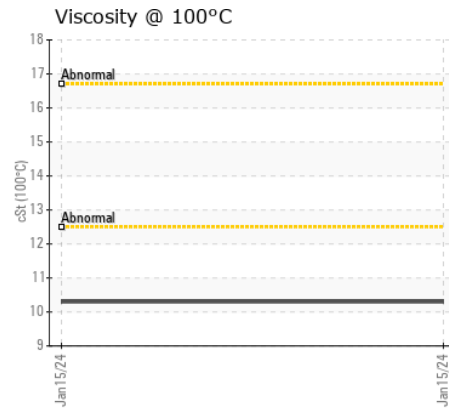
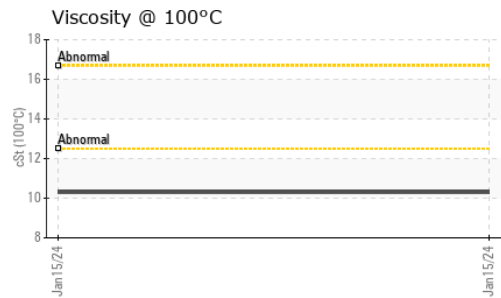
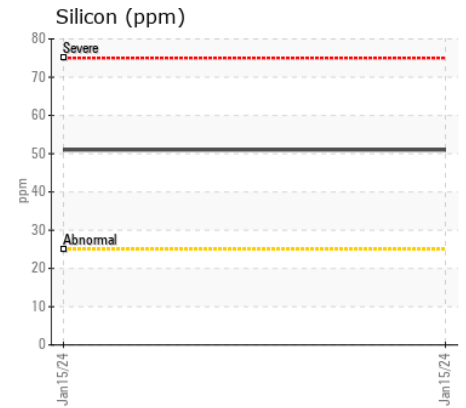
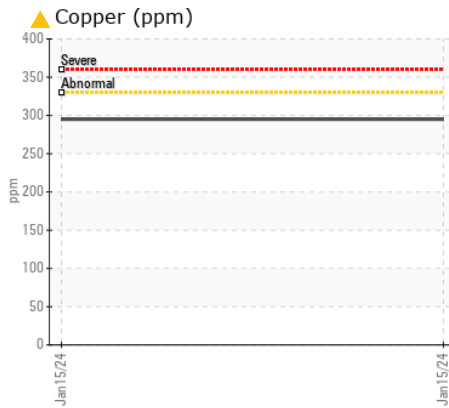
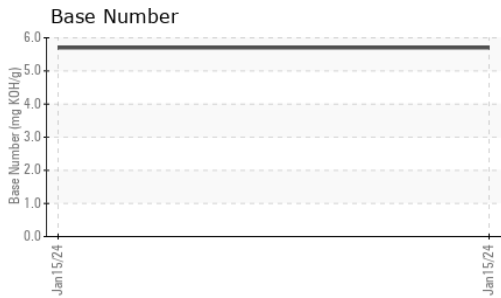
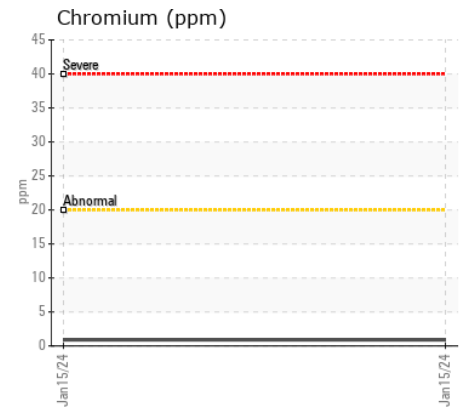
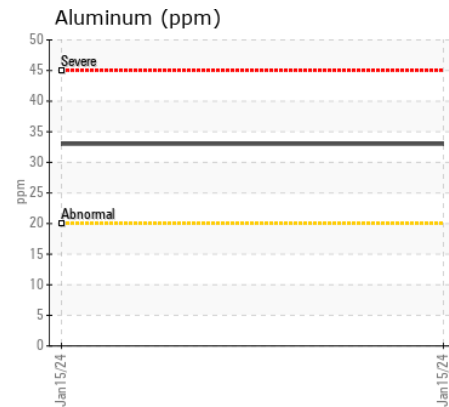
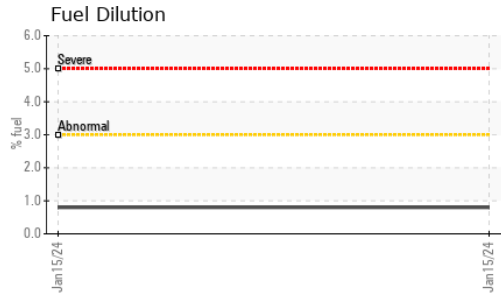
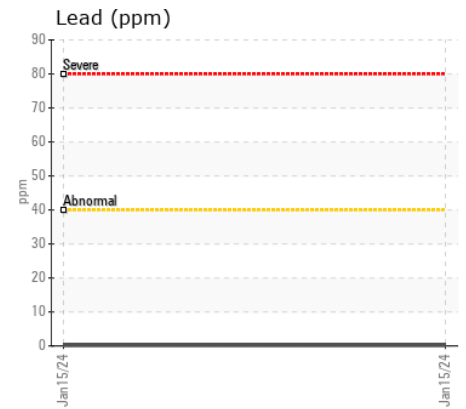
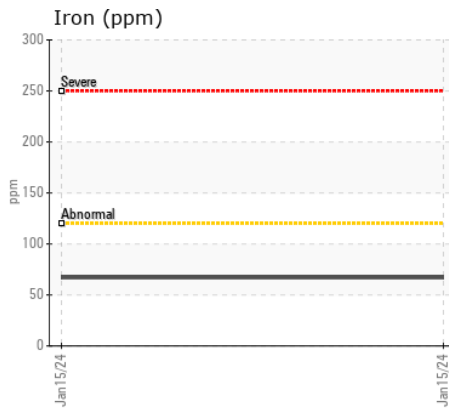
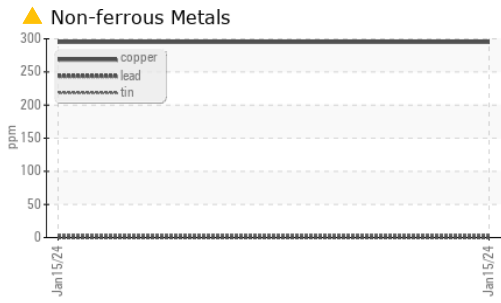
Fuel content negligible. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Test for glycol is negative.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-----|-----|
| Silicon | ppm | ASTM D5185m | >25 | 51 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 86 | --- | --- |
| Fuel | % | ASTM D3524 | >3.0 | 0.8 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >4 | 0.6 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 12.8 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.2 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- | --- |

FLUID CONDITION

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

| | | | | | | |
|------------------|----------|-------------|-----|--------------|-----|-----|
| Sodium | ppm | ASTM D5185m | | <1 | --- | --- |
| Boron | ppm | ASTM D5185m | | 53 | --- | --- |
| Barium | ppm | ASTM D5185m | | 4 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 112 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 4 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 605 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 1564 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 710 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 856 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 2344 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 25.2 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 5.7 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | | 10.3 | --- | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LF0001603 **Received** : 18 Jan 2024
Lab Number : 06064132 **Diagnosed** : 24 Jan 2024
Unique Number : 10835514 **Diagnostician** : Doug Bogart
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

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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