CONST

LESLIE EQUIPMENT CO.

# OIL ANALYSIS REPORT

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

Area
## Store 1 - Cowen [151918]
Machine Id
## WESTERN STAR 49X 5KJNBWFG6RLVG3104
Component
## Diesel Engine
Fluid
## DIESEL ENGINE OIL SAE 15W40 (13 GAL)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

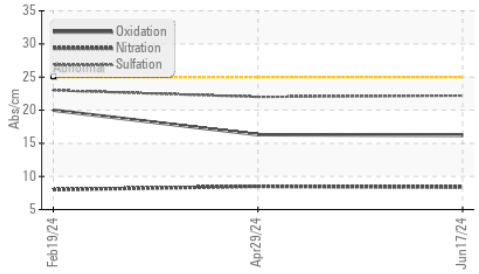
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

## FLUID CONDITION

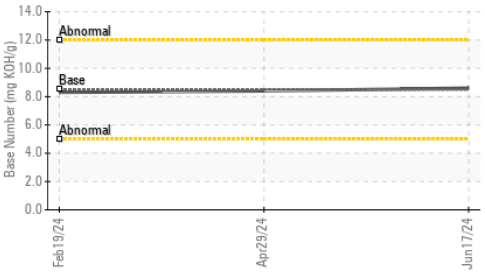
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | LEC0049852 | LEC0049909 | LEC0047380 |
| Sample Date | | Client Info | | 17 Jun 2024 | 29 Apr 2024 | 19 Feb 2024 |
| Machine Age | mls | Client Info | | 44724 | 29602 | 14550 |
| Oil Age | mls | Client Info | | 15122 | 15052 | 14550 |
| Filter Age | mls | Client Info | | 15122 | 15052 | 14550 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |
| Iron | ppm | ASTM D5185m | >100 | 12 | 16 | 41 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | <1 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 18 | 19 | 15 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 4 | 15 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 1 | 3 |
| 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 | >!20 | 12 | 14 | ▲ 40 |
| Potassium | ppm | ASTM D5185m | >20 | 41 | 41 | 42 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | 0.5 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.3 | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.4 | 8.5 | 8.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.2 | 22.0 | 23.0 |
| 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 | 2 | <1 | 5 |
| Boron | ppm | ASTM D5185m | 250 | 196 | 203 | 47 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 1 | 6 |
| Molybdenum | ppm | ASTM D5185m | 100 | 237 | 235 | 50 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | 6 |
| Magnesium | ppm | ASTM D5185m | 450 | 848 | 760 | 524 |
| Calcium | ppm | ASTM D5185m | 3000 | 1465 | 1364 | 1578 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 911 | 918 | 704 |
| Zinc | ppm | ASTM D5185m | 1350 | 1083 | 1037 | 841 |
| Sulfur | ppm | ASTM D5185m | 4250 | 3437 | 3078 | 2130 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.2 | 16.3 | 20.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 8.6 | 8.4 | 8.3 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.1 | 13.0 | ● 9.8 |

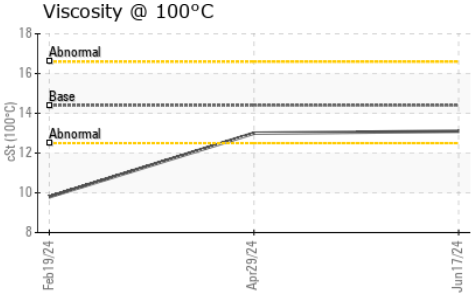
FT-IR (Direct Trend)



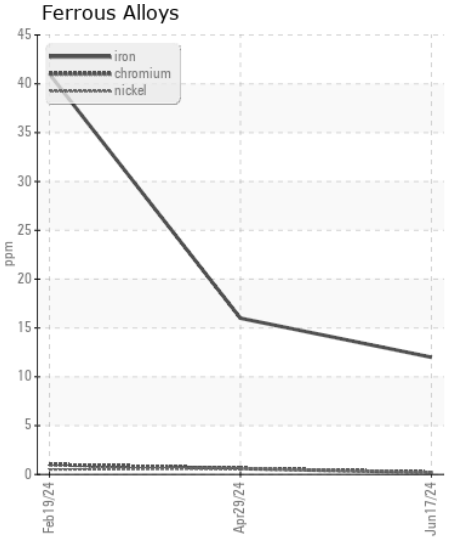

Base Number



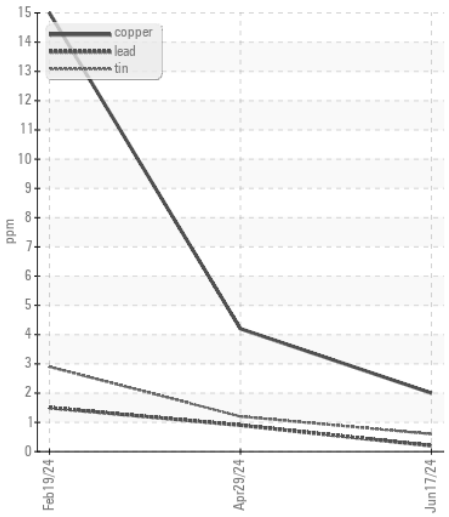

Viscosity @ 100°C



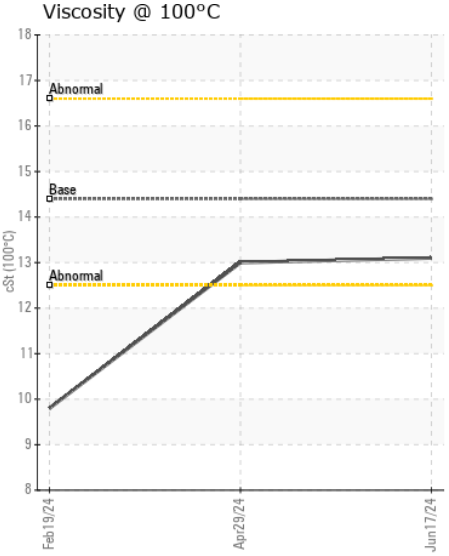

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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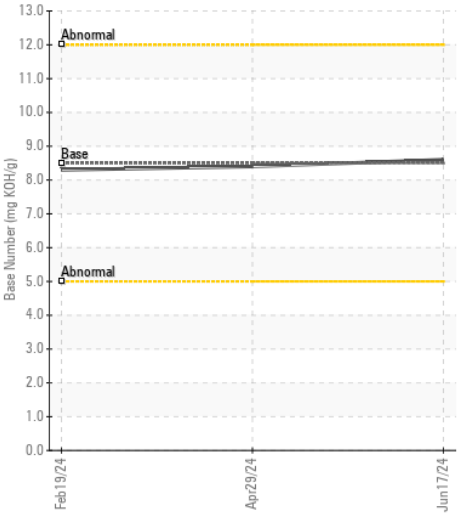


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : LEC0049852
**Lab Number** : 06214402
**Unique Number** : 11087266
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 19 Jun 2024
**Tested** : 20 Jun 2024
**Diagnosed** : 20 Jun 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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