

## LIEBHERR L52671329-Diesel Engine

## Sample No: LH0276153

Oil Type: DIESEL ENGINE OIL SAE 40

## - SAMPLEINFORMATION

| Sample Number | LH0276153 | LH0270422 | --- | --- |
| :---: | :---: | :---: | :---: | :---: |
| Sample Date | 27 Nov 2023 | 17 Sep 2023 | --- | --- |
| Machine Hours | 1607 | 1122 | --- | --- |
| Oil Hours | 0 | 0 | --- | --- |
| Oil Changed | Changed | Changed | --- | --- |
| Sample Status | NORMAL | NORMAL | --- | --- |

## - OILCONDITION

| Visc @ $100^{\circ} \mathrm{C}$ | cSt | O 13.9 | 13.6 | --- | --- |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Oxidation $(P A)$ | $\%$ | $\mathbf{6 2}$ | 66 | --- |  |


| Water | \% | NEG | NEG | --- | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Soot \% | \% | $\bigcirc 0.2$ | $\bigcirc 0.4$ | --- | --- |
| Nitration (PA) | \% | 58 | 65 | --- | --- |
| Sulfation (PA) | \% | 53 | 56 | --- | --- |
| Glycol | \% | NEG | NEG | --- | --- |
| Fuel | \% | <1.0 | <1.0 | --- | --- |
| Silicon | ppm | $\bigcirc 3$ | $\bigcirc 6$ | --- | --- |
| Sodium | ppm | $\bigcirc 2$ | $\bigcirc 2$ | --- | - |
| Potassium | ppm | $\bigcirc 1$ | $\bigcirc<1$ | --- | --- |

## Diagnosis

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.


## WEAR METALS

| Iron | ppm | $\bigcirc 11$ | $\bigcirc 21$ | --- | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Copper | ppm | $\bigcirc 2$ | $\bigcirc 9$ | --- | --- |
| Lead | ppm | $\bigcirc 2$ | $\bigcirc$ | --- | --- |
| Tin | ppm | $\bigcirc$ | <1 | --- | --- |
| Aluminum | ppm | $\bigcirc 2$ | $\bigcirc 2$ | --- | --- |
| Chromium | ppm | $\bigcirc$ | $\bigcirc<1$ | --- | --- |
| Molybdenum | ppm | $\bigcirc 46$ | $\bigcirc 7$ | --- | --- |
| Nickel | ppm | $\bigcirc<1$ | $\bigcirc 1$ | --- | --- |
| Titanium | ppm | $\bigcirc$ | $\bigcirc$ | --- | --- |
| Silver | ppm | $\bigcirc<1$ | 0 | --- | --- |
| Manganese | ppm | $\bigcirc$ | $\bigcirc<1$ | --- | --- |
| Vanadium | ppm | 0 | 0 | --- | --- |



## ADDITIVES

| Calcium | ppm | 1310 | 1059 | --- | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Magnesium | ppm | 737 | 955 | --- | --- |
| Zinc | ppm | 1124 | 1159 | --- | --- |
| Phosphorus | ppm | 953 | 996 | --- | --- |
| Barium | ppm | $\bigcirc<1$ | $\bigcirc$ | --- | --- |
| Boron | ppm | $\bigcirc 33$ | $\bigcirc 8$ | --- | --- |


| Depot: | LIEMIS |
| :--- | :--- |
| Unique No: | 5684493 |
| Signed: | Wes Davis |
| Report Date: | 29 Nov 2023 |

## GRAPHS



