

## LIEBHERR L580 066006-1760-Diesel Engine

Sample No: LH0262524
Oil Type: LIEBHERR MOTOROIL 5W30

## - SAMPLEINFORMATION

| Sample Number | LH0262524 | LHMC126780 | LH0235834 | - -- |
| :--- | :--- | :--- | :--- | :--- |
| Sample Date | $\mathbf{1 1 ~ S e p ~ 2 0 2 3 ~}$ | 22 May 2023 | 16 Sep 2022 | --- |
| Machine Hours | $\mathbf{2 4 6 5}$ | 1461 | 10 | - -- |
| Oil Hours | $\mathbf{0}$ | 560 | 0 | - -- |
| Oil Changed |  | N/A | Changed | N/A |
| Sample Status |  | NORMAL | NORMAL | ATTENTION |

OIL CONDITION

| Visc @ $100^{\circ} \mathrm{C}$ | cSt | $\bigcirc 11.3$ | $\bigcirc 11.8$ | $\bigcirc 12.3$ |
| :---: | :---: | :---: | :---: | :---: |
| Base Number (BN) | $\mathrm{mg} \mathrm{KOH} / \mathrm{g}$ | $\bigcirc 15.2$ | $\bigcirc 15.9$ | $\bigcirc 8.5$ |
| Oxidation (PA) | \% | 45 | 43 | 204 |



## CONTAMINATION

| Soot \% | \% | $\bigcirc 0.1$ | $\bigcirc 0.1$ | $\bigcirc 0.1$ | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nitration (PA) | \% | 101 | 88 | 76 | --- |
| Sulfation (PA) | \% | 42 | 42 | 113 | --- |
| Glycol | \% | NEG | NEG | NEG | --- |
| Fuel | \% | <1.0 | <1.0 | $\bigcirc 0.9$ | --- |
| Silicon | ppm | $\bigcirc 16$ | $\bigcirc 10$ | $\bigcirc 10$ | --- |
| Sodium | ppm | $\bigcirc 2$ | $\bigcirc 2$ | $\bigcirc<1$ | --- |
| Potassium | ppm | $\bigcirc 1$ | $\bigcirc<1$ | $\bigcirc 0$ | --- |



## WEAR METALS

| Iron | ppm | $\bigcirc 9$ | $\bigcirc 4$ | 3 | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Copper | ppm | $\bigcirc$ | $\bigcirc 2$ | 12 | --- |
| Lead | ppm | $\bigcirc<1$ | $\bigcirc$ | $\bigcirc<1$ | --- |
| Tin | ppm | $\bigcirc<1$ | $\bigcirc$ | $\bigcirc$ | --- |
| Aluminum | ppm | $\bigcirc 2$ | $\bigcirc$ | 5 | --- |
| Chromium | ppm | $\bigcirc<1$ | $\bigcirc$ | $\bigcirc<1$ | --- |
| Molybdenum | ppm | $\bigcirc 6$ | $\bigcirc<1$ | $\bigcirc 44$ | --- |
| Nickel | ppm | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | --- |
| Titanium | ppm | 0 | 0 | $\bigcirc<1$ | --- |
| Silver | ppm | $\bigcirc$ | 0 | 0 | --- |
| Manganese | ppm | $\bigcirc<1$ | $\bigcirc$ | $\bigcirc 2$ | --- |
| Vanadium | ppm | 0 | 0 | 0 | --- |



## ADDITIVES

| Calcium | ppm | 4267 | 4385 | 1295 | --- |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Magnesium | ppm | $\bigcirc 47$ | 66 | 887 | --- |
| Zinc | ppm | 1180 | 1309 | 844 | --- |
| Phosphorus | ppm | 1014 | 1071 | 765 | --- |
| Barium | ppm | $\bigcirc$ | $\bigcirc$ | $\bigcirc 14$ | --- |
| Boron | ppm | $\bigcirc 227$ | $\bigcirc 255$ | 130 | --- |


| Depot: | MRBBURLH |
| :--- | :--- |
| Unique No: | 10700754 |
| Signed: | Wes Davis |
| Report Date: | 19 Oct 2023 |



MR BULTS INC 2627 E 139TH ST BURNHAM, IL US 60633
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## 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

## LTE:BU|EDR <br> COHSTRUCTON EOUPMUEIT



