

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### [[S20230514031131]] LIEBHERR TA230 4162 - Front Rear Axle

Sample No: LH06059587

Oil Type: GEAR OIL SAE 80W90



#### SAMPLE INFORMATION

|               |             |     |     |     |
|---------------|-------------|-----|-----|-----|
| Sample Number | LH06059587  | --- | --- | --- |
| Sample Date   | 10 Nov 2023 | --- | --- | --- |
| Machine Hours | 3503        | --- | --- | --- |
| Oil Hours     | 0           | --- | --- | --- |
| Oil Changed   | Changed     | --- | --- | --- |
| Sample Status | ABNORMAL    | --- | --- | --- |

#### HEAVY MACHINES INC.

3930 EAST RAINES RD  
MEMPHIS, TN  
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#### OIL CONDITION

|             |     |        |     |     |     |
|-------------|-----|--------|-----|-----|-----|
| Visc @ 40°C | cSt | ● 62.8 | --- | --- | --- |
|-------------|-----|--------|-----|-----|-----|



#### CONTAMINATION

|           |     |      |     |     |     |
|-----------|-----|------|-----|-----|-----|
| Water     | %   | NEG  | --- | --- | --- |
| Silicon   | ppm | ● 10 | --- | --- | --- |
| Sodium    | ppm | ● 13 | --- | --- | --- |
| Potassium | ppm | ● 2  | --- | --- | --- |



#### WEAR METALS

|            |     |       |     |     |     |
|------------|-----|-------|-----|-----|-----|
| Iron       | ppm | ● 181 | --- | --- | --- |
| Copper     | ppm | ● 62  | --- | --- | --- |
| Lead       | ppm | ● 1   | --- | --- | --- |
| Tin        | ppm | ● 3   | --- | --- | --- |
| Aluminum   | ppm | ● 2   | --- | --- | --- |
| Chromium   | ppm | ● 2   | --- | --- | --- |
| Molybdenum | ppm | ● <1  | --- | --- | --- |
| Nickel     | ppm | ● 11  | --- | --- | --- |
| Titanium   | ppm | <1    | --- | --- | --- |
| Silver     | ppm | 0     | --- | --- | --- |
| Manganese  | ppm | ● 27  | --- | --- | --- |
| Vanadium   | ppm | 0     | --- | --- | --- |



#### ADDITIVES

|            |     |        |     |     |     |
|------------|-----|--------|-----|-----|-----|
| Calcium    | ppm | ● 3572 | --- | --- | --- |
| Magnesium  | ppm | ● 10   | --- | --- | --- |
| Zinc       | ppm | ● 1500 | --- | --- | --- |
| Phosphorus | ppm | ● 1260 | --- | --- | --- |
| Barium     | ppm | ● 4    | --- | --- | --- |
| Boron      | ppm | ● 126  | --- | --- | --- |

#### Diagnosis

No corrective action is recommended at this time. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. Additive levels indicate the addition of a different brand, or type of oil. Confirm oil type.

Depot: LEC0051  
Unique No: 10830969  
Signed: Jonathan Hester  
Report Date: 16 Jan 2024



### GRAPHS

