

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### [(360377)] LIEBHERR L580 059426-1464 - Diesel Engine

Sample No: LH0187106

Oil Type: PETRO CANADA 10W40



#### SAMPLE INFORMATION

| Sample Number | LH0187106   | LH0237638   | LH0237635   | LH0242479   |
|---------------|-------------|-------------|-------------|-------------|
| Sample Date   | 19 Jan 2024 | 08 Sep 2023 | 19 Jul 2023 | 17 Nov 2022 |
| Machine Hours | 5883        | 5106        | 4747        | 3593        |
| Oil Hours     | 0           | 0           | 0           | 0           |
| Oil Changed   | Changed     | Changed     | Changed     | Changed     |
| Sample Status | NORMAL      | NORMAL      | NORMAL      | NORMAL      |

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#### OIL CONDITION

| Visc @ 100°C   | cSt | 13.6 | 14.1 | 13.1 | 10.6 |
|----------------|-----|------|------|------|------|
| Oxidation (PA) | %   | 58   | 55   | 57   | 58   |



#### CONTAMINATION

| Water          | %   | NEG  | NEG  | NEG  | NEG  |
|----------------|-----|------|------|------|------|
| Soot %         | %   | 0    | 0    | 0    | 0    |
| Nitration (PA) | %   | 53   | 48   | 57   | 57   |
| Sulfation (PA) | %   | 51   | 50   | 53   | 53   |
| Glycol         | %   | NEG  | NEG  | NEG  | NEG  |
| Fuel           | %   | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon        | ppm | 4    | 4    | 5    | 4    |
| Sodium         | ppm | <1   | 1    | 2    | 1    |
| Potassium      | ppm | <1   | <1   | <1   | <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 | 4  | 2  | 4  | 4  |
| Copper     | ppm | <1 | <1 | 2  | 14 |
| Lead       | ppm | <1 | <1 | <1 | <1 |
| Tin        | ppm | 0  | 0  | <1 | <1 |
| Aluminum   | ppm | 1  | <1 | <1 | 1  |
| Chromium   | ppm | 0  | 0  | <1 | 0  |
| Molybdenum | ppm | 54 | 57 | 56 | 49 |
| Nickel     | ppm | <1 | 0  | 0  | 0  |
| Titanium   | ppm | 2  | 0  | 0  | <1 |
| Silver     | ppm | 0  | <1 | <1 | 0  |
| Manganese  | ppm | 0  | 0  | <1 | <1 |
| Vanadium   | ppm | 0  | 0  | 0  | 0  |



#### ADDITIVES

|            |     |      |      |      |     |
|------------|-----|------|------|------|-----|
| Calcium    | ppm | 1057 | 1026 | 1004 | 900 |
| Magnesium  | ppm | 917  | 957  | 981  | 822 |
| Zinc       | ppm | 1139 | 1165 | 1169 | 988 |
| Phosphorus | ppm | 1000 | 974  | 1036 | 915 |
| Barium     | ppm | 0    | <1   | 0    | 0   |
| Boron      | ppm | 5    | 1    | 5    | <1  |

Depot: CLOPEM  
 Unique No: 5736280  
 Signed: Wes Davis  
 Report Date: 01 Mar 2024



### GRAPHS

