

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L542 039769-1269 - Diesel Engine

Sample No: LH06058589

Oil Type: DIESEL ENGINE OIL SAE 5W40



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH06058589 | LH0220075 | LH0217355 | LHMC130075 |
| Sample Date | 19 Dec 2023 | 16 Jan 2023 | 04 Apr 2022 | 29 Sep 2020 |
| Machine Hours | 8181 | 7680 | 7234 | 6335 |
| Oil Hours | 500 | 500 | 500 | 500 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | SEVERE | NORMAL | NORMAL | NORMAL |

OZINGA MATERIALS

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OIL CONDITION

| | | | | | |
|------------------|----------|------|------|------|------|
| Visc @ 100°C | cSt | 11.1 | 12.1 | 12.2 | 11.4 |
| Base Number (BN) | mg KOH/g | 5.0 | 6.4 | 7.6 | --- |
| Oxidation (PA) | % | 77 | 86 | 66 | 65 |



CONTAMINATION

| | | | | | |
|----------------|-----|------|------|------|------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 0.5 | 0.4 | 0.4 | 0.1 |
| Nitration (PA) | % | 80 | 80 | 88 | 55 |
| Sulfation (PA) | % | 60 | 60 | 57 | 54 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | 10.5 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 4 | 4 | 4 | 4 |
| Sodium | ppm | <1 | 2 | 2 | 3 |
| Potassium | ppm | 4 | 1 | 6 | <1 |



WEAR METALS

| | | | | | |
|------------|-----|----|----|----|----|
| Iron | ppm | 12 | 9 | 10 | 4 |
| Copper | ppm | 1 | <1 | <1 | <1 |
| Lead | ppm | 1 | <1 | <1 | <1 |
| Tin | ppm | <1 | <1 | 0 | <1 |
| Aluminum | ppm | 2 | 2 | 2 | 0 |
| Chromium | ppm | <1 | <1 | <1 | <1 |
| Molybdenum | ppm | 8 | 39 | 26 | 46 |
| Nickel | ppm | <1 | 0 | 0 | <1 |
| Titanium | ppm | <1 | <1 | <1 | 20 |
| Silver | ppm | 0 | 0 | <1 | <1 |
| Manganese | ppm | <1 | <1 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | 0 | <1 |



ADDITIVES

| | | | | | |
|------------|-----|------|------|------|------|
| Calcium | ppm | 1126 | 1035 | 1156 | 1330 |
| Magnesium | ppm | 530 | 718 | 656 | 450 |
| Zinc | ppm | 743 | 1036 | 850 | 823 |
| Phosphorus | ppm | 665 | 821 | 712 | 702 |
| Barium | ppm | 0 | 0 | 0 | 0 |
| Boron | ppm | 56 | 86 | 76 | 59 |

Diagnosis

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Depot: CHICHILH
Unique No: 10829971
Signed: Wes Davis
Report Date: 15 Jan 2024



GRAPHS

