

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934 030815-1007 - Diesel Engine

Sample No: LH0243384

Oil Type: DIESEL ENGINE OIL SAE 15W40



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH0243384 | LHMC126695 | LHMC014040 | LHMC009527 |
| Sample Date | 14 Feb 2024 | 06 Sep 2018 | 27 Aug 2008 | 27 Oct 2007 |
| Machine Hours | 50198 | 39541 | 5808 | 2799 |
| Oil Hours | 0 | 0 | 230 | 100 |
| Oil Changed | Not Changd | Changed | Not Changd | Not Changd |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

DOMTAR PULP AND PAPER

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OIL CONDITION

| | | | | | |
|------------------|----------|------|-------|-------|-------|
| Visc @ 100°C | cSt | 11.9 | 14.33 | 15.43 | 14.45 |
| Base Number (BN) | mg KOH/g | 9.9 | --- | --- | --- |
| Oxidation (PA) | % | 64 | 82 | 51 | 46 |



CONTAMINATION

| | | | | | |
|----------------|-----|-----|------|------|------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 1.7 | 2.1 | 2.8 | 1 |
| Nitration (PA) | % | 53 | 68 | 73 | 45 |
| Sulfation (PA) | % | 63 | 68 | 62 | 50 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | 0.5 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 9 | 3 | 2 | 2 |
| Sodium | ppm | 2 | 4 | 9 | 2 |
| Potassium | ppm | <1 | 0 | 3 | 2 |

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. Fuel content negligible. 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.



WEAR METALS

| | | | | | |
|------------|-----|----|----|----|----|
| Iron | ppm | 11 | 6 | 19 | 8 |
| Copper | ppm | 0 | <1 | <1 | <1 |
| Lead | ppm | 0 | <1 | 0 | <1 |
| Tin | ppm | <1 | <1 | 0 | <1 |
| Aluminum | ppm | 1 | 1 | 1 | <1 |
| Chromium | ppm | 0 | <1 | <1 | <1 |
| Molybdenum | ppm | 26 | 41 | 52 | 34 |
| Nickel | ppm | 0 | 0 | <1 | 0 |
| Titanium | ppm | 0 | 0 | <1 | 0 |
| Silver | ppm | 0 | 0 | 0 | 0 |
| Manganese | ppm | <1 | <1 | <1 | 2 |
| Vanadium | ppm | 0 | 0 | 0 | 0 |



ADDITIVES

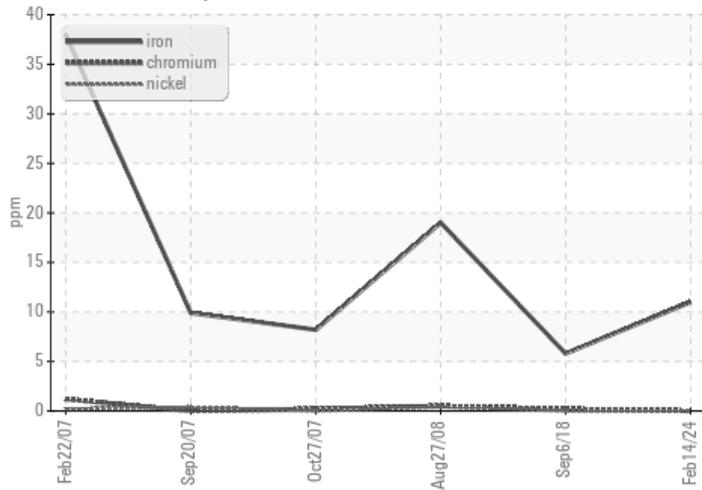
| | | | | | |
|------------|-----|------|------|------|------|
| Calcium | ppm | 2082 | 1746 | 1520 | 1535 |
| Magnesium | ppm | 328 | 497 | 842 | 526 |
| Zinc | ppm | 1045 | 854 | 1006 | 926 |
| Phosphorus | ppm | 846 | 704 | 976 | 843 |
| Barium | ppm | 0 | 0 | 0 | <1 |
| Boron | ppm | 53 | 34 | 31 | 28 |

Depot: DOMWAU
Unique No: 10888921
Signed: Wes Davis
Report Date: 25 Feb 2024

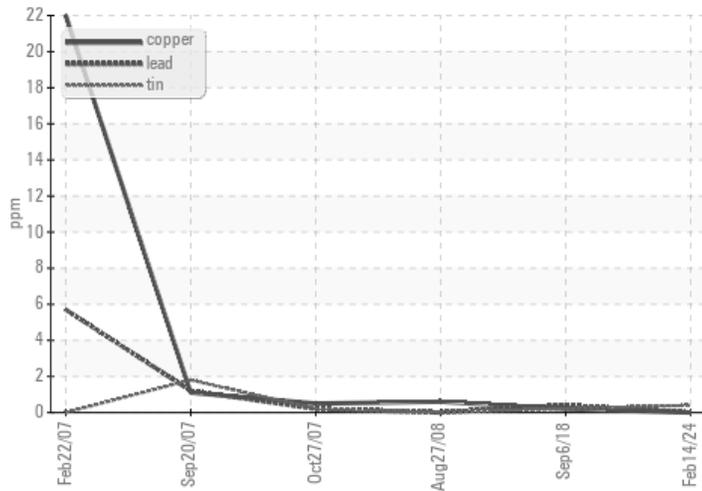


GRAPHS

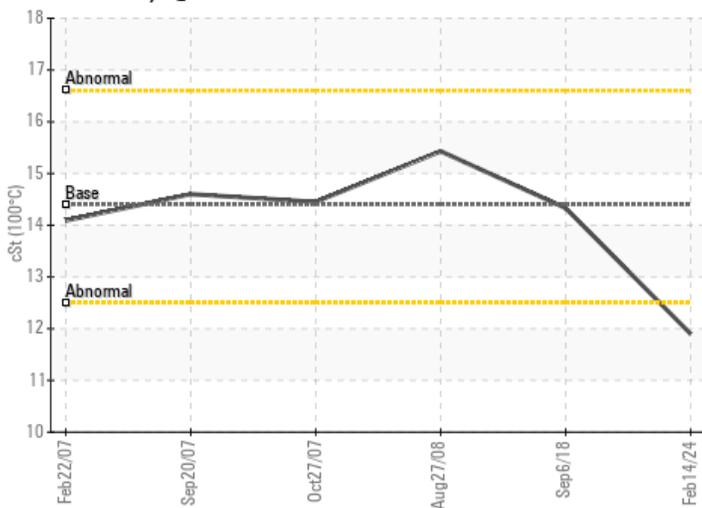
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

