

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR PR776 021879-1860 - Diesel Engine

Sample No: LH0272662

Oil Type: MOBIL DELVAC 1300 SUPER 10W30



LIEBHERR MINING EQUIPMENT CO
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Sample Information

| | | | | |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH0272662 | LH0174053 | LH0220563 | LHMC129609 |
| Sample Date | 27 Jun 2024 | 10 Oct 2023 | 22 Mar 2023 | 01 Feb 2023 |
| Machine Hours | 4795 | 2436 | 2001 | 1470 |
| Oil Hours | 0 | 537 | 0 | 0 |
| Oil Changed | Not Chngd | N/A | N/A | N/A |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |



Oil Condition

| | | | | | |
|------------------|----------|------|------|------|------|
| Visc @ 100°C | cSt | 11.8 | 11.1 | 11.0 | 11.0 |
| Base Number (BN) | mg KOH/g | 6.7 | 9.1 | 9.9 | 9.0 |
| Oxidation (PA) | % | 58 | 79 | 82 | 83 |



Contamination

| | | | | | |
|----------------|-----|------|------|------|------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 0.3 | 0.1 | 0.1 | 0.1 |
| Nitration (PA) | % | 73 | 53 | 55 | 59 |
| Sulfation (PA) | % | 52 | 59 | 60 | 62 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 7 | 7 | 7 | 7 |
| Sodium | ppm | 4 | 3 | 6 | 3 |
| Potassium | ppm | 4 | <1 | <1 | 1 |



Wear Metals

| | | | | | |
|------------|-----|----|----|----|----|
| Iron | ppm | 13 | 7 | 15 | 10 |
| Copper | ppm | 6 | 4 | 4 | 15 |
| Lead | ppm | <1 | <1 | <1 | 2 |
| Tin | ppm | 0 | <1 | <1 | 2 |
| Aluminum | ppm | 2 | 2 | 1 | <1 |
| Chromium | ppm | <1 | <1 | <1 | <1 |
| Molybdenum | ppm | 5 | 40 | 41 | 40 |
| Nickel | ppm | 0 | 0 | <1 | 0 |
| Titanium | ppm | <1 | 0 | 0 | 0 |
| Silver | ppm | 0 | 0 | 0 | 0 |
| Manganese | ppm | <1 | <1 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | 0 | 0 |



Additives

| | | | | | |
|------------|-----|------|------|------|------|
| Calcium | ppm | 1503 | 1698 | 1606 | 1654 |
| Magnesium | ppm | 723 | 505 | 465 | 462 |
| Zinc | ppm | 883 | 933 | 878 | 890 |
| Phosphorus | ppm | 793 | 772 | 720 | 716 |
| Barium | ppm | 0 | 0 | 0 | 0 |
| Boron | ppm | 55 | 49 | 42 | 52 |

Diagnosis

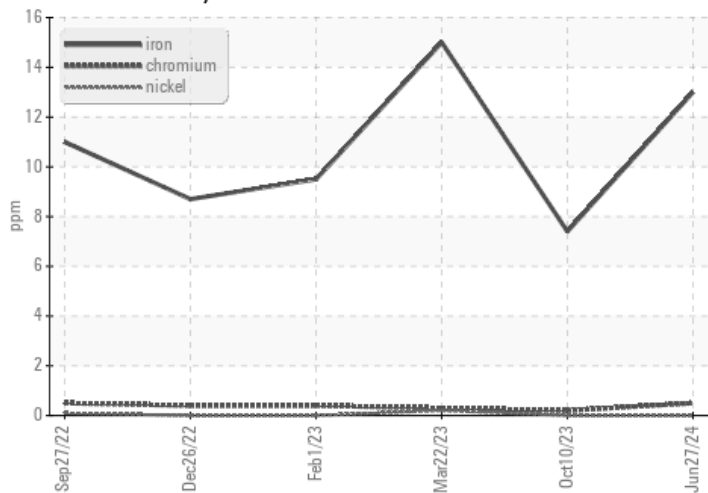
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: LIEGIL
 Unique No: 11114578
 Signed: Wes Davis
 Report Date: 10 Jul 2024

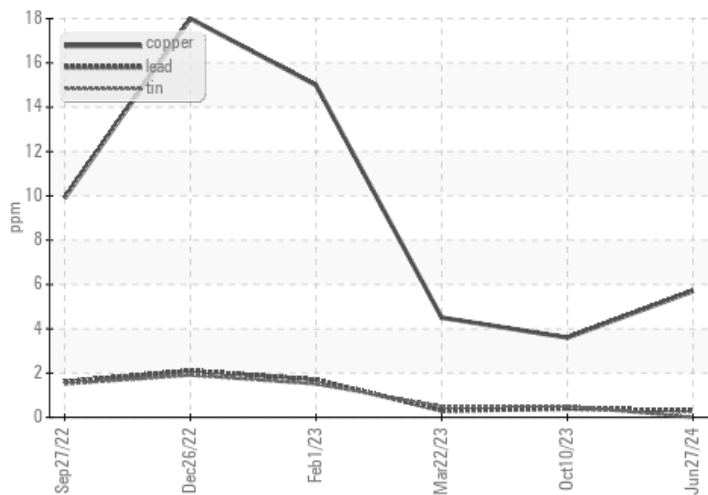


Graphs

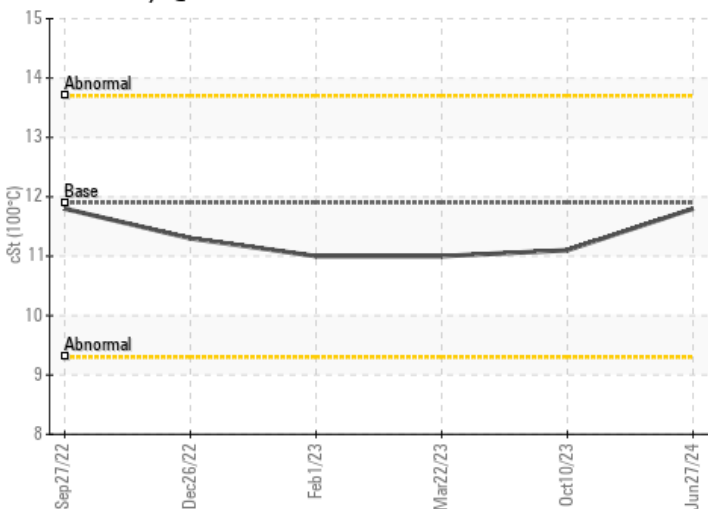
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

