



CONSTRUCTION EQUIPMENT

SWA510210 VOLVO L220G 12011 - DIESEL ENGINE



Sample No: VCP370030
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: SWA510210



SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VCP370030 | VCP442828 | VCP386455 | VCP320140 |
| Sample Date | 20 Mar 2024 | 22 Nov 2023 | 07 Oct 2022 | 25 Sep 2021 |
| Machine Hours | 21938 | 21516 | 19623 | 18543 |
| Oil Hours | 0 | 0 | 0 | 0 |
| Oil Changed | Changed | Changed | N/A | N/A |
| Sample Status | ABNORMAL | ABNORMAL | ABNORMAL | SEVERE |

ALTA EQUIPMENT
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OIL CONDITION

| | | | | | |
|------------------|----------|---------------|--------|--------|--------|
| Visc @ 100°C | cSt | █ 12.8 | █ 13.7 | █ 12.9 | █ 13.5 |
| Base Number (BN) | mg KOH/g | █ 10.1 | ▲ 3.9 | █ 10.1 | --- |
| Oxidation (PA) | % | 80 | 92 | 90 | 77 |

CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|-------|-------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | █ 0.7 | ▲ 3 | █ 1.8 | █ 0.7 |
| Nitration (PA) | % | 61 | 108 | 89 | 82 |
| Sulfation (PA) | % | 64 | 76 | 74 | 66 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | █ 4 | █ 10 | ▲ 28 | ▲ 290 |
| Sodium | ppm | █ 2 | █ 1 | █ 10 | █ 8 |
| Potassium | ppm | █ 0 | █ 2 | █ 9 | █ 35 |

WEAR METALS

| | | | | | |
|------------|-----|----------------|------|------|-------|
| Iron | ppm | █ 20 | █ 90 | █ 45 | ▲ 298 |
| Copper | ppm | ▲ 36 | ▲ 86 | ▲ 31 | ▲ 18 |
| Lead | ppm | █ <1 | █ <1 | █ 2 | ▲ 17 |
| Tin | ppm | █ 0 | █ 2 | █ 4 | █ 5 |
| Aluminum | ppm | █ 2 | █ 5 | █ 5 | ● 93 |
| Chromium | ppm | █ 0 | █ 2 | █ 1 | █ 10 |
| Molybdenum | ppm | █ 40 | █ 39 | █ 46 | █ 45 |
| Nickel | ppm | █ 0 | █ <1 | █ 1 | █ 2 |
| Titanium | ppm | 0 | <1 | <1 | 4 |
| Silver | ppm | █ 0 | █ 0 | 0 | 0 |
| Manganese | ppm | █ 0 | █ 1 | █ 3 | █ 6 |
| Vanadium | ppm | 0 | 0 | <1 | <1 |

ADDITIVES

| | | | | | |
|------------|-----|---------------|--------|--------|--------|
| Calcium | ppm | █ 1745 | █ 1544 | █ 1798 | █ 5165 |
| Magnesium | ppm | █ 525 | █ 461 | █ 425 | █ 739 |
| Zinc | ppm | █ 1101 | █ 1006 | █ 1138 | █ 1088 |
| Phosphorus | ppm | █ 941 | █ 754 | █ 883 | █ 946 |
| Barium | ppm | █ 0 | █ 2 | █ 2 | █ 0 |
| Boron | ppm | █ 36 | █ 11 | █ 23 | █ 25 |

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The copper level has decreased, but is still abnormal. All other 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 acceptable for the time in service.

Depot: VOLVO0142
Unique No: 10941522
Signed: Don Baldrige
Report Date: 27 Mar 2024



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GRAPHS

