

OIL ANALYSIS REPORT



GEORGE KABATIN VOLVO PENTA A274742 - STARBOARD DIESEL ENGINE

Sample No: VPA053118
Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VPA053118 | VPA045699 | VPA028111 | VPA037062 |
| Sample Date | 27 Mar 2024 | 13 Apr 2023 | 22 Jun 2022 | 27 Aug 2021 |
| Machine Hours | 462 | 423 | 367 | 354 |
| Oil Hours | 0 | 0 | 0 | 0 |
| Oil Changed | Changed | Changed | N/A | Not Changd |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C | cSt | 13.3 | 13.2 | 13.5 | 13.6 |
| Base Number (BN) | mg KOH/g | 10.6 | 9.1 | 10.4 | --- |
| Oxidation (PA) | % | 69 | 52 | 56 | 57 |

CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|------|------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 0.2 | 0.2 | 0.2 | 0.2 |
| Nitration (PA) | % | 42 | 41 | 48 | 48 |
| Sulfation (PA) | % | 57 | 47 | 53 | 55 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 6 | 5 | 6 | 6 |
| Sodium | ppm | <1 | 1 | 2 | 2 |
| Potassium | ppm | 1 | <1 | <1 | 3 |

Diagnosis

Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. 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 | 9 | 12 | 9 |
| Copper | ppm | <1 | 2 | 4 | 3 |
| Lead | ppm | 0 | <1 | 2 | 0 |
| Tin | ppm | 0 | <1 | 1 | <1 |
| Aluminum | ppm | <1 | 0 | 1 | 1 |
| Chromium | ppm | 0 | <1 | <1 | <1 |
| Molybdenum | ppm | 48 | 58 | 48 | 48 |
| Nickel | ppm | 0 | 0 | 1 | <1 |
| Titanium | ppm | 0 | 0 | 0 | <1 |
| Silver | ppm | 0 | 0 | 17 | 0 |
| Manganese | ppm | 0 | <1 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | 0 | 0 |

ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 1562 | 1024 | 1166 | 1177 |
| Magnesium | ppm | 745 | 919 | 876 | 913 |
| Zinc | ppm | 1076 | 1188 | 1227 | 1106 |
| Phosphorus | ppm | 929 | 1004 | 964 | 964 |
| Barium | ppm | 0 | 0 | 0 | 0 |
| Boron | ppm | 41 | 3 | 31 | 27 |

Depot: VP794951
Unique No: 10953996
Signed: Sean Felton
Report Date: 03 Apr 2024

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**VOLVO
PENTA**

GRAPHS

