

OIL ANALYSIS REPORT

VOLVO PENTA

PO 110902 110902 VOLVO PENTA A1068479 - STARBOARD DIESEL ENGINE

Sample No: VPA041206

Oil Type: VOLVO PENTA SAE 15W40

SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-------------|-----|
| Sample Number | VPA041206 | VPA028657 | VPA030712 | --- |
| Sample Date | 23 Oct 2023 | 03 Nov 2021 | 16 Dec 2019 | --- |
| Machine Hours | 192 | 138 | 44 | --- |
| Oil Hours | 0 | 0 | 0 | --- |
| Oil Changed | Changed | Changed | Changed | --- |
| Sample Status | NORMAL | NORMAL | NORMAL | --- |

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OIL CONDITION

| | | | | | |
|------------------|----------|--------|--------|--------|-----|
| Visc @ 100°C | cSt | █ 13.3 | █ 13.4 | █ 13.5 | --- |
| Base Number (BN) | mg KOH/g | █ 9.7 | --- | --- | --- |
| Oxidation (PA) | % | 55 | 58 | 52 | --- |

CONTAMINATION

| | | | | | |
|----------------|-----|-------|-------|-------|-----|
| Soot % | % | █ 0.1 | █ 0.3 | █ 0.1 | --- |
| Nitration (PA) | % | 44 | 53 | 52 | --- |
| Sulfation (PA) | % | 50 | 53 | 47 | --- |
| Glycol | % | NEG | NEG | NEG | --- |
| Fuel | % | <1.0 | <1.0 | <1.0 | --- |
| Silicon | ppm | █ 6 | █ 10 | █ 18 | --- |
| Sodium | ppm | █ <1 | █ 2 | █ 4 | --- |
| Potassium | ppm | █ <1 | █ 8 | █ 6 | --- |

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 acceptable for the time in service.

WEAR METALS

| | | | | | |
|------------|-----|------|------|------|-----|
| Iron | ppm | █ 12 | █ 16 | █ 8 | --- |
| Copper | ppm | █ 3 | █ 7 | █ 10 | --- |
| Lead | ppm | █ <1 | █ 0 | █ 1 | --- |
| Tin | ppm | █ <1 | █ 0 | █ 0 | --- |
| Aluminum | ppm | █ 1 | █ 2 | █ 3 | --- |
| Chromium | ppm | █ <1 | █ <1 | █ <1 | --- |
| Molybdenum | ppm | █ 57 | █ 63 | █ 42 | --- |
| Nickel | ppm | █ <1 | █ <1 | █ 1 | --- |
| Titanium | ppm | █ 0 | █ <1 | █ <1 | --- |
| Silver | ppm | █ 0 | █ 0 | █ 0 | --- |
| Manganese | ppm | █ <1 | █ <1 | █ <1 | --- |
| Vanadium | ppm | 0 | 0 | 0 | --- |

ADDITIVES

| | | | | | |
|------------|-----|--------|--------|--------|-----|
| Calcium | ppm | █ 1011 | █ 1408 | █ 2122 | --- |
| Magnesium | ppm | █ 939 | 1139 | █ 528 | --- |
| Zinc | ppm | █ 1280 | █ 1278 | █ 1167 | --- |
| Phosphorus | ppm | █ 1055 | █ 1119 | █ 1025 | --- |
| Barium | ppm | █ 0 | █ 0 | █ <1 | --- |
| Boron | ppm | █ 3 | █ 8 | █ 44 | --- |

Depot: VP945077
Unique No: 10714704
Signed: Don Baldrige
Report Date: 31 Oct 2023

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GRAPHS

