

OIL ANALYSIS REPORT



RICHMOND 3950006318 - STARBOARD IPS

Sample No: VPA050919
Oil Type: GEAR OIL SAE 75W90

SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VPA050919 | VPA046631 | VPA051982 | VPA046517 |
| Sample Date | 27 Mar 2024 | 12 Jan 2024 | 25 Oct 2023 | 11 Aug 2023 |
| Machine Hours | 7846 | 1261 | 6723 | 6253 |
| Oil Hours | 500 | 569 | 500 | 596 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

VIRGINIA PILOT ASSOCIATION

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OIL CONDITION

| | | | | | |
|-------------|-----|------------|-----|-----|-----|
| Visc @ 40°C | cSt | 104 | 104 | 104 | 103 |
|-------------|-----|------------|-----|-----|-----|

CONTAMINATION

| | | | | | |
|-----------|-----|------------|-----|-----|-----|
| Water | % | NEG | NEG | NEG | NEG |
| Silicon | ppm | 2 | 4 | 3 | 1 |
| Sodium | ppm | 5 | 12 | 10 | 2 |
| Potassium | ppm | 2 | <1 | 1 | 1 |

WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|----|
| PQ | | 15 | 13 | 14 | 13 |
| Iron | ppm | 23 | 25 | 25 | 22 |
| Copper | ppm | 11 | 7 | 7 | 6 |
| Lead | ppm | <1 | 0 | 0 | 0 |
| Tin | ppm | 1 | <1 | <1 | 0 |
| Aluminum | ppm | 2 | 2 | 2 | <1 |
| Chromium | ppm | <1 | 0 | <1 | 0 |
| Molybdenum | ppm | <1 | 0 | <1 | <1 |
| Nickel | ppm | <1 | 0 | <1 | 0 |
| Titanium | ppm | <1 | 0 | 0 | 0 |
| Silver | ppm | <1 | 0 | 0 | 0 |
| Manganese | ppm | <1 | <1 | <1 | <1 |
| Vanadium | ppm | <1 | <1 | 0 | <1 |

ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 6 | 8 | 22 | 12 |
| Magnesium | ppm | 1 | 3 | 7 | 2 |
| Zinc | ppm | 1 | 12 | 37 | 0 |
| Phosphorus | ppm | 1340 | 1362 | 1439 | 1323 |
| Barium | ppm | 0 | 0 | 20 | 0 |
| Boron | ppm | 335 | 291 | 359 | 323 |

Diagnosis

No corrective action is recommended at this time. 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 condition of the oil is acceptable for the time in service.

Depot: VPVIRVIR
Unique No: 10951808
Signed: Sean Felton
Report Date: 02 Apr 2024

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VOLVO PENTA

GRAPHS

