

OIL ANALYSIS REPORT

VOLVO PENTA

VOLVO PENTA 2006038571 - STARBOARD DIESEL ENGINE

Sample No: VPA056864

Oil Type: DIESEL ENGINE OIL SAE 15W40

SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-----|-----|
| Sample Number | VPA056864 | VPA047298 | --- | --- |
| Sample Date | 29 Aug 2023 | 02 May 2022 | --- | --- |
| Machine Hours | 2099 | 2053 | --- | --- |
| Oil Hours | 0 | 0 | --- | --- |
| Oil Changed | N/A | N/A | --- | --- |
| Sample Status | NORMAL | NORMAL | --- | --- |

JOHNSTONS MARINE SERVICES

1850 NW 15th AVENUE, SUITE 205
POMPANO BEACH, FL
US 33069
Contact: NEIL JOHNSTON
neil@1jms.com
T: (984)448-0813
F:

OIL CONDITION

| | | | | | |
|------------------|----------|--------|--------|-----|-----|
| Visc @ 100°C | cSt | █ 14.8 | █ 13.9 | --- | --- |
| Base Number (BN) | mg KOH/g | █ 8.3 | █ 10.2 | --- | --- |
| Oxidation (PA) | % | 58 | 60 | --- | --- |

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.

CONTAMINATION

| | | | | | |
|----------------|-----|-------|-------|-----|-----|
| Soot % | % | █ 0.1 | █ 0.1 | --- | --- |
| Nitration (PA) | % | 49 | 46 | --- | --- |
| Sulfation (PA) | % | 50 | 57 | --- | --- |
| Glycol | % | NEG | NEG | --- | --- |
| Fuel | % | <1.0 | <1.0 | --- | --- |
| Silicon | ppm | █ 12 | █ 5 | --- | --- |
| Sodium | ppm | █ 4 | █ <1 | --- | --- |
| Potassium | ppm | █ 2 | █ 0 | --- | --- |

WEAR METALS

| | | | | | |
|------------|-----|------|------|-----|-----|
| Iron | ppm | █ 13 | █ 4 | --- | --- |
| Copper | ppm | █ <1 | █ 3 | --- | --- |
| Lead | ppm | █ 0 | █ 4 | --- | --- |
| Tin | ppm | █ <1 | █ <1 | --- | --- |
| Aluminum | ppm | █ 4 | █ 1 | --- | --- |
| Chromium | ppm | █ <1 | █ <1 | --- | --- |
| Molybdenum | ppm | █ 45 | █ 57 | --- | --- |
| Nickel | ppm | █ 0 | █ 0 | --- | --- |
| Titanium | ppm | █ 0 | █ 0 | --- | --- |
| Silver | ppm | █ 0 | █ <1 | --- | --- |
| Manganese | ppm | █ <1 | █ <1 | --- | --- |
| Vanadium | ppm | 0 | 0 | --- | --- |

ADDITIVES

| | | | | | |
|------------|-----|--------|--------|-----|-----|
| Calcium | ppm | █ 1330 | █ 1073 | --- | --- |
| Magnesium | ppm | █ 778 | █ 1005 | --- | --- |
| Zinc | ppm | █ 1304 | █ 1243 | --- | --- |
| Phosphorus | ppm | █ 1042 | █ 1082 | --- | --- |
| Barium | ppm | █ 0 | █ 0 | --- | --- |
| Boron | ppm | █ 33 | █ 4 | --- | --- |

Depot: VPJOHDEE
Unique No: 10629124
Signed: Sean Felton
Report Date: 31 Aug 2023

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GRAPHS

