

OIL ANALYSIS REPORT

VOLVO PENTA

KEVIN BARNES RAG TOP VOLVO PENTA 869598 (S/N 2006015353) - STARBOARD DIESEL ENGINE

Sample No: VPA051945

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA051945	VPA258951	---	---
Sample Date	09 Oct 2023	29 Jun 2020	---	---
Machine Hours	533	340	---	---
Oil Hours	0	100	---	---
Oil Changed	N/A	Changed	---	---
Sample Status	ATTENTION	NORMAL	---	---

North Harbor Diesel Inc
720 30Th Street
ANACORTES, WA
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OIL CONDITION

Visc @ 100°C	cSt	█ 14.0	█ 14.5	---	---
Base Number (BN)	mg KOH/g	█ 8.2	---	---	---
Oxidation (PA)	%	51	77	---	---

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is 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 suitable for further service.

CONTAMINATION

Soot %	%	█ 0.1	█ 0.1	---	---
Nitration (PA)	%	65	67	---	---
Sulfation (PA)	%	49	63	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	4	█ 3	---	---
Sodium	ppm	█ 2	█ 3	---	---
Potassium	ppm	█ 3	█ 7	---	---

WEAR METALS

Iron	ppm	8	█ 13	---	---
Copper	ppm	5	█ 4	---	---
Lead	ppm	1	█ 1	---	---
Tin	ppm	<1	█ <1	---	---
Aluminum	ppm	▲ 22	█ 2	---	---
Chromium	ppm	1	█ <1	---	---
Molybdenum	ppm	2	█ 4	---	---
Nickel	ppm	<1	█ <1	---	---
Titanium	ppm	0	█ 0	---	---
Silver	ppm	0	█ 0	---	---
Manganese	ppm	<1	█ <1	---	---
Vanadium	ppm	0	0	---	---

ADDITIVES

Calcium	ppm	1337	█ 2466	---	---
Magnesium	ppm	774	█ 17	---	---
Zinc	ppm	866	█ 1138	---	---
Phosphorus	ppm	724	█ 1078	---	---
Barium	ppm	0	█ 0	---	---
Boron	ppm	88	█ 192	---	---

Depot: VP179089
Unique No: 10710523
Signed: Jonathan Hester
Report Date: 31 Oct 2023

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GRAPHS

