

OIL ANALYSIS REPORT



BOB MORRIS VOLVO PENTA 2061160292 - STARBOARD DIESEL ENGINE

Sample No: VPA058323
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

SAMPLE INFORMATION

Sample Number	VPA058323	VPA041607	VPA030297	---
Sample Date	22 May 2024	24 Aug 2022	18 Dec 2019	---
Machine Hours	1347	1935	1225	---
Oil Hours	1347	689	0	---
Oil Changed	Not Changd	Not Changd	Not Changd	---
Sample Status	NORMAL	NORMAL	NORMAL	---

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 SAN RAFAEL, CA
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OIL CONDITION

Visc @ 100°C	cSt	13.78	13.4	14.1	---
Base Number (BN)	mg KOH/g	10.0	10.8	---	---
Oxidation (PA)	%	56	65	53	---

CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	0.1	0.2	0.2	---
Nitration (PA)	%	43	61	64	---
Sulfation (PA)	%	52	57	51	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	6	6	5	---
Sodium	ppm	1	3	4	---
Potassium	ppm	1	2	0	---

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.

WEAR METALS

Iron	ppm	10	17	11	---
Copper	ppm	4	12	11	---
Lead	ppm	2	8	3	---
Tin	ppm	<1	1	0	---
Aluminum	ppm	2	2	1	---
Chromium	ppm	0	<1	<1	---
Molybdenum	ppm	59	54	5	---
Nickel	ppm	1	4	2	---
Titanium	ppm	0	0	<1	---
Silver	ppm	<1	<1	0	---
Manganese	ppm	<1	<1	<1	---
Vanadium	ppm	0	<1	0	---

ADDITIVES

Calcium	ppm	1071	1096	1220	---
Magnesium	ppm	1005	856	650	---
Zinc	ppm	1287	1158	698	---
Phosphorus	ppm	1045	962	671	---
Barium	ppm	0	2	0	---
Boron	ppm	7	22	94	---

Depot: VP152741
Unique No: 11047674
Signed: Doug Bogart
Report Date: 24 May 2024

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**VOLVO
PENTA**

GRAPHS

