

OIL ANALYSIS REPORT

**VOLVO
PENTA**

RUSSELL 312 VOLVO PENTA 2013657604 - PORT DIESEL ENGINE

Sample No: VPA032310

Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

SAMPLE INFORMATION

Sample Number	VPA032310	VPA017741	VPA016732	---
Sample Date	07 Jul 2023	05 Jul 2019	03 Aug 2018	---
Machine Hours	687	256	92	---
Oil Hours	104	164	92	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

Galati Yacht Sales LLC

900 S. BAY BLVD., PO Box 862

ANNA MARIA, FL

US 34216

Contact: ERIC STAMMER

estammer@galatiyachts.com

T: (941)778-0755

F:

OIL CONDITION

Visc @ 100°C	cSt	13.0	13.3	12.98	---
Base Number (BN)	mg KOH/g	9.7	---	---	---
Oxidation (PA)	%	59	63	71	---

CONTAMINATION

Soot %	%	0.2	0.4	0.2	---
Nitration (PA)	%	44	56	45	---
Sulfation (PA)	%	53	57	60	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	3	16	46	---
Sodium	ppm	1	2	5	---
Potassium	ppm	0	0	16	---

WEAR METALS

Iron	ppm	2	15	14	---
Copper	ppm	<1	4	10	---
Lead	ppm	0	2	<1	---
Tin	ppm	<1	0	<1	---
Aluminum	ppm	<1	5	7	---
Chromium	ppm	0	<1	<1	---
Molybdenum	ppm	57	72	42	---
Nickel	ppm	0	<1	<1	---
Titanium	ppm	<1	<1	0	---
Silver	ppm	0	0	0	---
Manganese	ppm	0	<1	2	---
Vanadium	ppm	0	<1	0	---

ADDITIVES

Calcium	ppm	994	1701	3008	---
Magnesium	ppm	941	425	187	---
Zinc	ppm	1177	1131	1067	---
Phosphorus	ppm	967	913	855	---
Barium	ppm	0	0	0	---
Boron	ppm	0	289	323	---

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.

Depot: VP648685

Unique No: 10549106

Signed: Don Baldrige

Report Date: 11 Jul 2023

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GRAPHS

