

OIL ANALYSIS REPORT



NADINE URUIOLI SF WHALE TOURS VOLVO 7011339217 - STARBOARD DIESEL ENGINE

Sample No: VPA053030
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

SAMPLE INFORMATION

Sample Number	VPA053030	VPA048723	VPA022618	VPA024613
Sample Date	09 May 2024	25 May 2023	10 Jun 2019	14 Nov 2018
Machine Hours	8456	7688	5100	1274
Oil Hours	8456	0	0	1274
Oil Changed	Changed	Not Changd	Not Changd	Not Changd
Sample Status	ATTENTION	MARGINAL	ABNORMAL	ATTENTION

Helmut's Marine Service
 619 Canal Street
 SAN RAFAEL, CA
 US 94901-3545
 Contact: NADINE URUIOLI
 SERVICE@HELMUTSMARINE.COM
 T: x:
 F: x:

OIL CONDITION

Visc @ 100°C	cSt	11.6	12.2	11.3	11.86
Base Number (BN)	mg KOH/g	7.9	9.0	---	---
Oxidation (PA)	%	65	66	56	67

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.4	0.3	0.3	0.7
Nitration (PA)	%	64	63	58	79
Sulfation (PA)	%	58	60	54	60
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	3.2	2.6	4.6	<1.0
Silicon	ppm	8	5	3	7
Sodium	ppm	4	0	5	4
Potassium	ppm	4	<1	<1	3

WEAR METALS

Iron	ppm	15	11	10	38
Copper	ppm	74	65	52	133
Lead	ppm	3	0	2	<1
Tin	ppm	4	<1	<1	0
Aluminum	ppm	4	0	2	3
Chromium	ppm	3	<1	<1	2
Molybdenum	ppm	61	61	50	55
Nickel	ppm	4	<1	<1	3
Titanium	ppm	2	0	0	<1
Silver	ppm	3	0	<1	0
Manganese	ppm	3	<1	<1	<1
Vanadium	ppm	2	0	0	0

ADDITIVES

Calcium	ppm	1075	1117	910	1128
Magnesium	ppm	923	998	827	1006
Zinc	ppm	1188	1310	981	1152
Phosphorus	ppm	990	1062	825	863
Barium	ppm	1	0	0	0
Boron	ppm	7	1	4	4

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: VP152741
Unique No: 11033669
Signed: Jonathan Hester
Report Date: 21 May 2024

OIL ANALYSIS REPORT

VOLVO PENTA

GRAPHS

