

OIL ANALYSIS REPORT



RAVEN 502618 VOLVO PENTA 20132126287 - STARBOARD DIESEL ENGINE

Sample No: VPA057219
Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

SAMPLE INFORMATION

Sample Number	VPA057219	VPA034318	---	---
Sample Date	02 Apr 2024	16 Feb 2023	---	---
Machine Hours	118	58	---	---
Oil Hours	60	58	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	NORMAL	NORMAL	---	---

North Harbor Diesel Inc
 720 30Th Street
 ANACORTES, WA
 US 98221
 Contact: ED MCFARLIN
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 T:
 F:

OIL CONDITION

Visc @ 100°C	cSt	13.0	12.6	---	---
Base Number (BN)	mg KOH/g	10.1	9.9	---	---
Oxidation (PA)	%	55	54	---	---

CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	0.1	0.1	---	---
Nitration (PA)	%	40	45	---	---
Sulfation (PA)	%	52	51	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	10	21	---	---
Sodium	ppm	<1	1	---	---
Potassium	ppm	8	16	---	---

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 acceptable for the time in service.

WEAR METALS

Iron	ppm	6	8	---	---
Copper	ppm	1	3	---	---
Lead	ppm	<1	1	---	---
Tin	ppm	<1	1	---	---
Aluminum	ppm	3	6	---	---
Chromium	ppm	<1	<1	---	---
Molybdenum	ppm	63	66	---	---
Nickel	ppm	<1	0	---	---
Titanium	ppm	<1	0	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	<1	2	---	---
Vanadium	ppm	<1	0	---	---

ADDITIVES

Calcium	ppm	1222	1395	---	---
Magnesium	ppm	1088	820	---	---
Zinc	ppm	1431	1303	---	---
Phosphorus	ppm	1142	1020	---	---
Barium	ppm	0	0	---	---
Boron	ppm	0	15	---	---

Depot: VP179089
Unique No: 10970494
Signed: Don Baldrige
Report Date: 14 Apr 2024

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GRAPHS

