

OIL ANALYSIS REPORT



RAVEN 502618 VOLVO PENTA 20132126222 - PORT DIESEL ENGINE

Sample No: VPA058481
Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

SAMPLE INFORMATION

Sample Number	VPA058481	VPA034316	---	---
Sample Date	02 Apr 2024	16 Feb 2023	---	---
Machine Hours	119	58	---	---
Oil Hours	61	58	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	NORMAL	ATTENTION	---	---

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	■ 13.1	● 12.3	---	---
Base Number (BN)	mg KOH/g	■ 10.0	■ 10.0	---	---
Oxidation (PA)	%	■ 56	54	---	---

CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	■ 0.1	■ 0.1	---	---
Nitration (PA)	%	40	45	---	---
Sulfation (PA)	%	52	51	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	■ 0.7	---	---
Silicon	ppm	■ 10	■ 21	---	---
Sodium	ppm	■ <1	■ 1	---	---
Potassium	ppm	■ 10	■ 18	---	---

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	■ 9	---	---
Copper	ppm	■ 1	■ 3	---	---
Lead	ppm	■ <1	■ 1	---	---
Tin	ppm	■ <1	■ 1	---	---
Aluminum	ppm	■ 4	■ 7	---	---
Chromium	ppm	■ <1	■ 1	---	---
Molybdenum	ppm	■ 66	■ 66	---	---
Nickel	ppm	■ <1	■ 0	---	---
Titanium	ppm	■ <1	■ <1	---	---
Silver	ppm	■ 0	■ 0	---	---
Manganese	ppm	■ <1	■ 2	---	---
Vanadium	ppm	<1	0	---	---

ADDITIVES

Calcium	ppm	■ 1233	■ 1403	---	---
Magnesium	ppm	■ 1086	■ 818	---	---
Zinc	ppm	■ 1433	■ 1307	---	---
Phosphorus	ppm	■ 1156	■ 1028	---	---
Barium	ppm	■ 0	■ 0	---	---
Boron	ppm	■ 4	■ 16	---	---

Depot: VP179089
Unique No: 10970493
Signed: Don Baldrige
Report Date: 14 Apr 2024

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GRAPHS

