

# OIL ANALYSIS REPORT

# VOLVO PENTA

## RANDY HANSON SWEDE VOLVO PENTA A219418 - CENTER DIESEL ENGINE

Sample No: VPA059950

Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

### SAMPLE INFORMATION

Sample Number	VPA059950	VPA056219	VPA043613	VPA257730
Sample Date	07 Dec 2023	07 Mar 2023	02 Feb 2022	09 Nov 2020
Machine Hours	1004	953	898	832
Oil Hours	51	0	66	0
Oil Changed	Changed	Changed	Changed	N/A
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

**North Harbor Diesel Inc**  
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ANACORTES, WA  
US 98221  
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### OIL CONDITION

Visc @ 100°C	cSt	█ 13.8	█ 13.7	█ 13.8	█ 13.9
Base Number (BN)	mg KOH/g	█ 8.7	█ 8.7	█ 9.4	---
Oxidation (PA)	%	52	57	54	51

### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	█ 0.2	█ 0.2	█ 0.2	█ 0.2
Nitration (PA)	%	61	53	68	63
Sulfation (PA)	%	51	58	53	52
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	█ 5	█ 5	█ 6	█ 6
Sodium	ppm	█ 1	█ <1	█ 0	█ 3
Potassium	ppm	█ 3	█ 2	█ 3	█ 5

### WEAR METALS

Iron	ppm	█ 10	█ 12	█ 16	█ 8
Copper	ppm	█ 4	█ 5	█ 4	█ 3
Lead	ppm	█ 1	█ 1	█ 1	█ 0
Tin	ppm	█ <1	█ <1	█ <1	█ 0
Aluminum	ppm	█ 2	█ 4	█ 4	█ 1
Chromium	ppm	█ <1	█ <1	█ <1	█ <1
Molybdenum	ppm	20	█ 78	█ 3	█ 1
Nickel	ppm	█ 2	█ 2	█ 2	█ 2
Titanium	ppm	█ 0	█ 0	█ <1	█ <1
Silver	ppm	█ 0	█ 0	█ <1	█ 0
Manganese	ppm	█ <1	█ <1	█ <1	█ <1
Vanadium	ppm	<1	<1	0	0

### ADDITIVES

Calcium	ppm	█ 1265	█ 1414	█ 1433	█ 1442
Magnesium	ppm	█ 721	█ 623	█ 788	█ 783
Zinc	ppm	█ 798	█ 810	█ 769	█ 796
Phosphorus	ppm	█ 676	█ 663	█ 739	█ 778
Barium	ppm	█ 0	█ 8	█ 0	█ 0
Boron	ppm	█ 123	█ 231	█ 96	█ 90

### 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.

Depot: VP179089  
Unique No: 10795642  
Signed: Don Baldrige  
Report Date: 21 Dec 2023

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PENTA**

## GRAPHS

