

# OIL ANALYSIS REPORT

**VOLVO  
PENTA**

**SAMO SAMO VOLVO PENTA 20132091169 - RIGHT OUTER DIESEL ENGINE**

**Sample No:** VPA049889  
**Oil Type:** VOLVO VDS-4.5 Premium Motor Oil 15W40

## SAMPLE INFORMATION

Sample Number	<b>VPA049889</b>	VPA046354	---	---
Sample Date	<b>02 Nov 2023</b>	05 Apr 2023	---	---
Machine Hours	<b>302</b>	201	---	---
Oil Hours	<b>50</b>	201	---	---
Oil Changed	<b>Changed</b>	Not Changd	---	---
Sample Status	<b>NORMAL</b>	MARGINAL	---	---

**Marine International Diesels Inc.**  
 3600 HACIENDA BLVD UNIT G  
 DAVIE, FL  
 US 33314  
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## OIL CONDITION

Visc @ 100°C	cSt	<b>13.3</b>	13.3	---	---
Base Number (BN)	mg KOH/g	<b>9.8</b>	7.5	---	---
Oxidation (PA)	%	<b>53</b>	34	---	---

## CONTAMINATION

Soot %	%	<b>0.2</b>	0.4	---	---
Nitration (PA)	%	<b>42</b>	47	---	---
Sulfation (PA)	%	<b>51</b>	42	---	---
Glycol	%	<b>NEG</b>	NEG	---	---
Fuel	%	<b>&lt;1.0</b>	<1.0	---	---
Silicon	ppm	<b>12</b>	34	---	---
Sodium	ppm	<b>1</b>	<1	---	---
Potassium	ppm	<b>5</b>	25	---	---

## 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	<b>6</b>	27	---	---
Copper	ppm	<b>6</b>	30	---	---
Lead	ppm	<b>0</b>	1	---	---
Tin	ppm	<b>0</b>	3	---	---
Aluminum	ppm	<b>3</b>	14	---	---
Chromium	ppm	<b>&lt;1</b>	<1	---	---
Molybdenum	ppm	<b>53</b>	9	---	---
Nickel	ppm	<b>0</b>	0	---	---
Titanium	ppm	<b>0</b>	0	---	---
Silver	ppm	<b>0</b>	0	---	---
Manganese	ppm	<b>0</b>	3	---	---
Vanadium	ppm	<b>0</b>	0	---	---

## ADDITIVES

Calcium	ppm	<b>1031</b>	1179	---	---
Magnesium	ppm	<b>932</b>	932	---	---
Zinc	ppm	<b>1228</b>	1316	---	---
Phosphorus	ppm	<b>1067</b>	1053	---	---
Barium	ppm	<b>5</b>	0	---	---
Boron	ppm	<b>0</b>	7	---	---

**Depot:** VP694356  
**Unique No:** 10729264  
**Signed:** Sean Felton  
**Report Date:** 09 Nov 2023

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## GRAPHS

