

# OIL ANALYSIS REPORT



## ENCORE V - STARBOARD MAIN ENGINE

Sample No: VPA042629

Oil Type: SHELL ROTELLA T 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA042629</b>	VPA042623	VPA042627	VPA039827
Sample Date	<b>24 Jan 2024</b>	01 Nov 2023	20 Feb 2023	20 Jul 2022
Machine Hours	<b>5912</b>	5712	0	3916
Oil Hours	<b>200</b>	200	200	200
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

**BAY STATE CRUISE COMPANY**  
 200 SEAPORT BLVD, SUITE 50 LOWER LEVEL  
 BOSTON, MA  
 US 02210  
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### OIL CONDITION

Visc @ 100°C	cSt	<b>14.5</b>	14.5	13.5	14.8
Base Number (BN)	mg KOH/g	<b>9.6</b>	9.3	9.2	10.4
Oxidation (PA)	%	<b>53</b>	55	49	58

### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.1</b>	0.2	0.1	0.1
Nitration (PA)	%	<b>44</b>	45	43	49
Sulfation (PA)	%	<b>48</b>	50	47	52
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>3</b>	4	4	3
Sodium	ppm	<b>1</b>	0	3	2
Potassium	ppm	<b>&lt;1</b>	2	<1	2

### WEAR METALS

Iron	ppm	<b>5</b>	2	4	4
Copper	ppm	<b>3</b>	2	2	2
Lead	ppm	<b>&lt;1</b>	<1	<1	<1
Tin	ppm	<b>0</b>	<1	<1	<1
Aluminum	ppm	<b>8</b>	1	<1	2
Chromium	ppm	<b>&lt;1</b>	1	<1	<1
Molybdenum	ppm	<b>61</b>	58	59	54
Nickel	ppm	<b>2</b>	2	2	2
Titanium	ppm	<b>0</b>	<1	0	0
Silver	ppm	<b>0</b>	<1	3	0
Manganese	ppm	<b>&lt;1</b>	<1	<1	<1
Vanadium	ppm	<b>&lt;1</b>	<1	<1	<1

### ADDITIVES

Calcium	ppm	<b>1127</b>	1058	1051	1016
Magnesium	ppm	<b>1019</b>	963	862	847
Zinc	ppm	<b>1335</b>	1197	1137	1146
Phosphorus	ppm	<b>1087</b>	987	944	925
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>0</b>	<1	40	9

### 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 suitable for further service.

**Depot:** VPBAYBOS  
**Unique No:** 11073303  
**Signed:** Don Baldrige  
**Report Date:** 13 Jun 2024

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**VOLVO  
PENTA**

## GRAPHS

