



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**SEAWARD EXPLORER**  
Machine Id  
**Explorer - RHIB**  
Component  
**Starboard Diesel Engine**  
Fluid  
**MOBIL DELVAC 1330 (--- GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0886560</b>	WC0859366	---
Sample Date		Client Info		<b>07 Feb 2024</b>	08 Nov 2023	---
Machine Age	hrs	Client Info		<b>90</b>	88	---
Oil Age	hrs	Client Info		<b>90</b>	88	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	---
Filter Changed		Client Info		<b>N/A</b>	N/A	---
Sample Status				<b>ABNORMAL</b>	ABNORMAL	---

## WEAR

Piston, ring and cylinder wear is indicated. All other metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	<b>▲ 313</b>	▲ 299	---
Chromium	ppm	ASTM D5185m	>20	<b>18</b>	17	---
Nickel	ppm	ASTM D5185m	>4	<b>7</b>	6	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>▲ 41</b>	▲ 39	---
Lead	ppm	ASTM D5185m	>40	<b>2</b>	1	---
Copper	ppm	ASTM D5185m	>330	<b>41</b>	42	---
Tin	ppm	ASTM D5185m	>15	<b>2</b>	<1	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

## CONTAMINATION

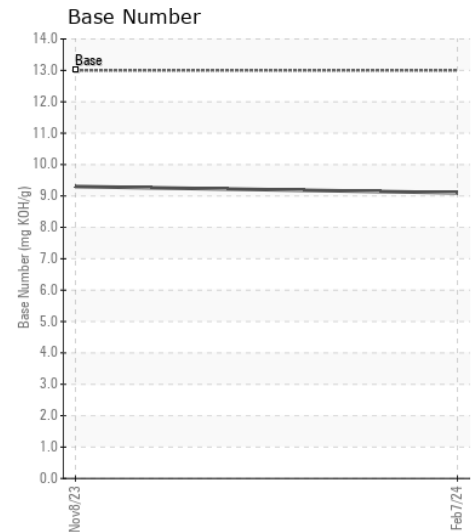
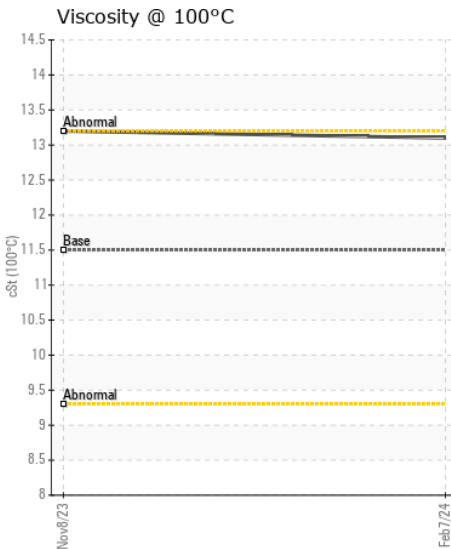
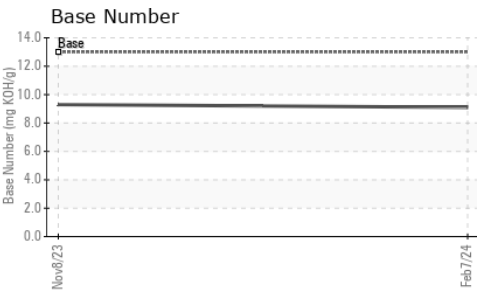
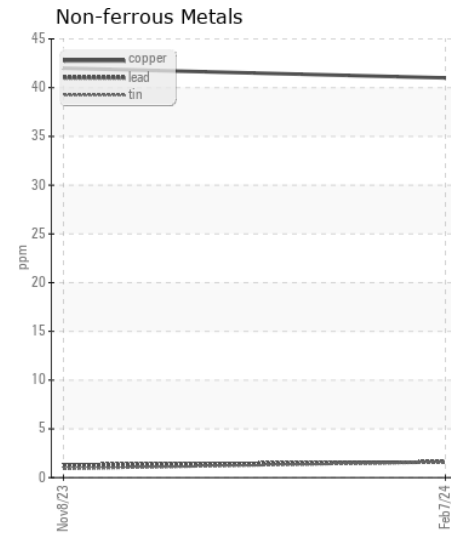
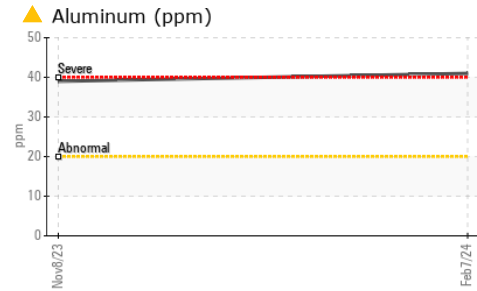
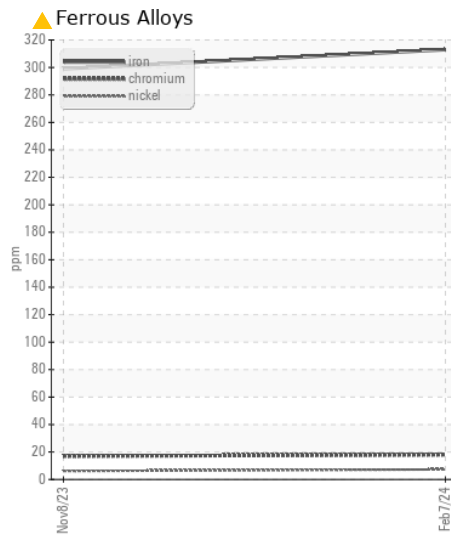
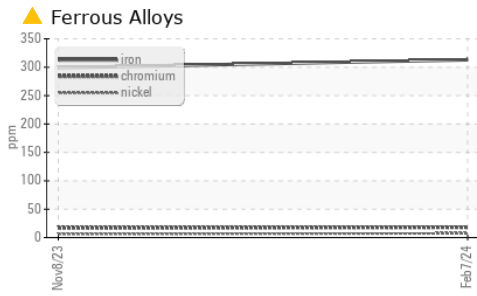
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>20</b>	19	---
Potassium	ppm	ASTM D5185m	>20	<b>28</b>	30	---
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.4</b>	6.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.2</b>	17.6	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

## FLUID CONDITION

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.

Sodium	ppm	ASTM D5185m		<b>8</b>	6	---
Boron	ppm	ASTM D5185m		<b>3</b>	<1	---
Barium	ppm	ASTM D5185m		<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>65</b>	62	---
Manganese	ppm	ASTM D5185m		<b>3</b>	2	---
Magnesium	ppm	ASTM D5185m		<b>948</b>	888	---
Calcium	ppm	ASTM D5185m		<b>1040</b>	1058	---
Phosphorus	ppm	ASTM D5185m		<b>1006</b>	944	---
Zinc	ppm	ASTM D5185m		<b>1258</b>	1167	---
Sulfur	ppm	ASTM D5185m		<b>3534</b>	3450	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.7</b>	12.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	13	<b>9.1</b>	9.3	---
Visc @ 100°C	cSt	ASTM D445	11.5	<b>13.1</b>	13.2	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0886560  
**Lab Number** : 06104040  
**Unique Number** : 10902270  
**Test Package** : MAR 2

**Received** : 29 Feb 2024  
**Tested** : 29 Feb 2024  
**Diagnosed** : 02 Mar 2024 - Don Baldrige

**SEAWARD SERVICES**  
 222 PEARL ST  
 NEW ALBANY, IN  
 US 47150

Contact: PETER CHARBONNET  
 PCHARBONNET@HMS-SEAWARD.COM

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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F: