



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
OCEAN NAVIGATOR
Machine Id
[OCEAN NAVIGATOR] OCEAN NAVIGATOR MENG SB
Component
Starboard Main Engine
Fluid
FUCHS 15W40 (--- LTR)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0824572	WC0824576	WC0824510
Sample Date		Client Info		23 Oct 2023	24 Sep 2023	15 Aug 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	23	23	26
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	1	2	2
Lead	ppm	ASTM D5185m	>18	6	7	7
Copper	ppm	ASTM D5185m	>80	20	21	29
Tin	ppm	ASTM D5185m	>14	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

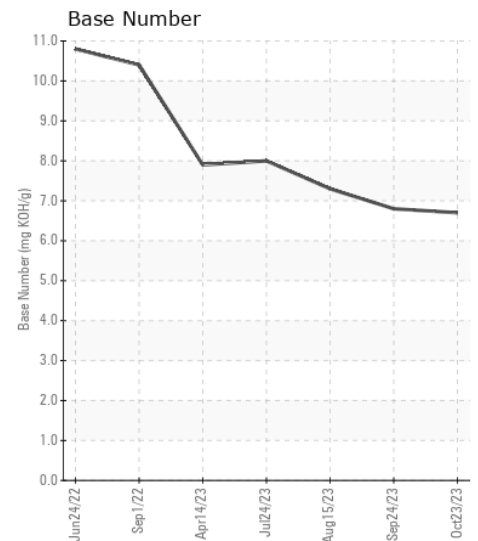
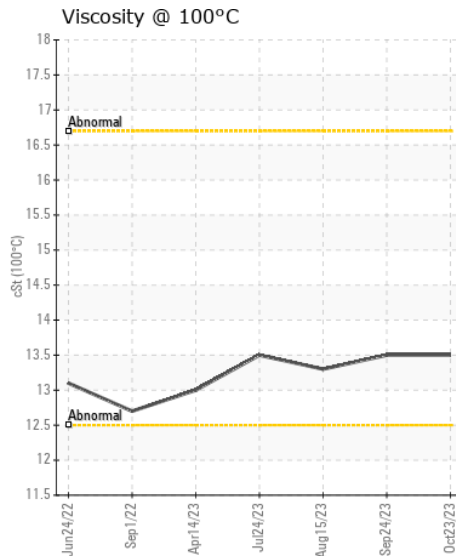
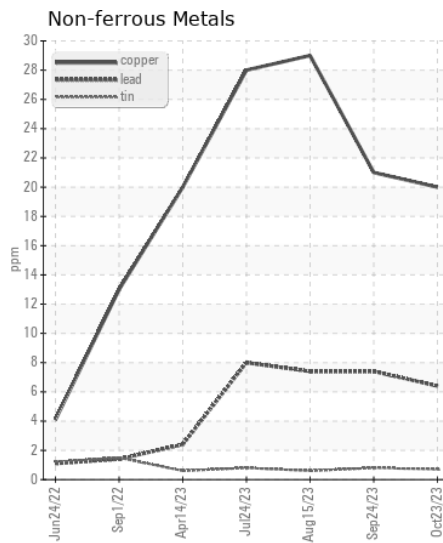
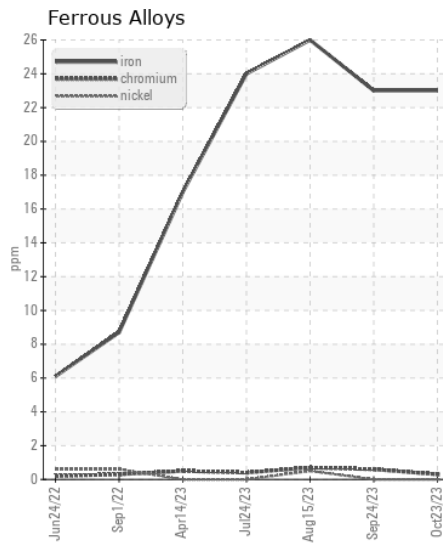
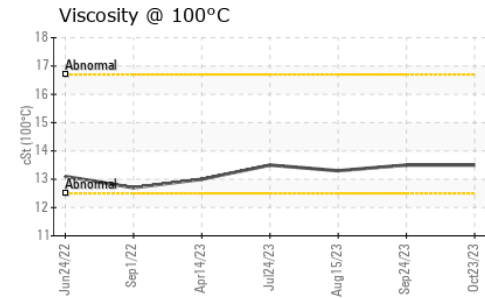
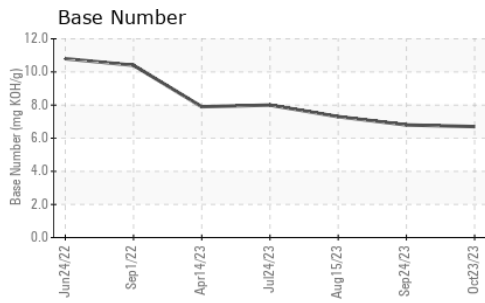
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	6	7
Potassium	ppm	ASTM D5185m	>20	2	1	3
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.1	9.0	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	21.6	21.7
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	24	25	35
Boron	ppm	ASTM D5185m		23	21	28
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		5	5	8
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		30	18	13
Calcium	ppm	ASTM D5185m		2981	3049	3093
Phosphorus	ppm	ASTM D5185m		940	937	901
Zinc	ppm	ASTM D5185m		1174	1215	1117
Sulfur	ppm	ASTM D5185m		3549	3768	3783
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	15.3	15.2
Base Number (BN)	mg KOH/g	ASTM D2896		6.7	6.8	7.3
Visc @ 100°C	cSt	ASTM D445		13.5	13.5	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824572
Lab Number : 05991967
Unique Number : 10714629
Test Package : MAR 2

Received : 27 Oct 2023
Tested : 30 Oct 2023
Diagnosed : 30 Oct 2023 - Wes Davis

American Queen Voyages - Oceans
 1201 Bridgeport Drive
 Jeffersonville, IN
 US 47130

Contact: Dietrich Giles
 DIETRICH.GILES@AQVOYAGES.COM

T: (228)591-6239

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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