



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Thunder
Machine Id
4934402970

Component
Starboard Main Engine
Fluid
TUXTON HD SYNTHETIC BLEND 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		WC0834819	---	---
Sample Date		Client Info		30 May 2024	---	---
Machine Age	hrs	Client Info		2000	---	---
Oil Age	hrs	Client Info		500	---	---
Filter Age	hrs	Client Info		500	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>75	12	---	---
Chromium	ppm	ASTM D5185(m)	>8	<1	---	---
Nickel	ppm	ASTM D5185(m)	>2	0	---	---
Titanium	ppm	ASTM D5185(m)	>3	0	---	---
Silver	ppm	ASTM D5185(m)	>2	0	---	---
Aluminum	ppm	ASTM D5185(m)	>15	2	---	---
Lead	ppm	ASTM D5185(m)	>18	0	---	---
Copper	ppm	ASTM D5185(m)	>80	1	---	---
Tin	ppm	ASTM D5185(m)	>14	0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	VLITE	---	---

CONTAMINATION

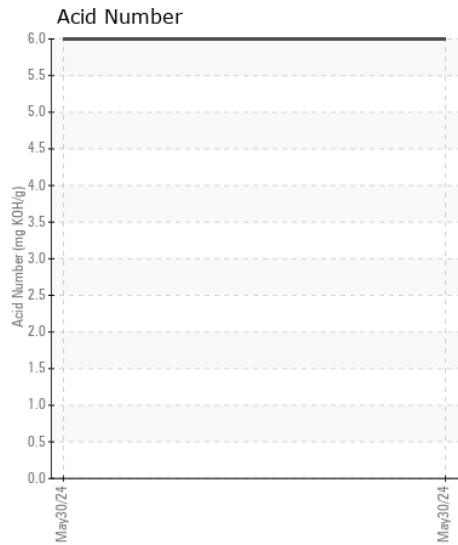
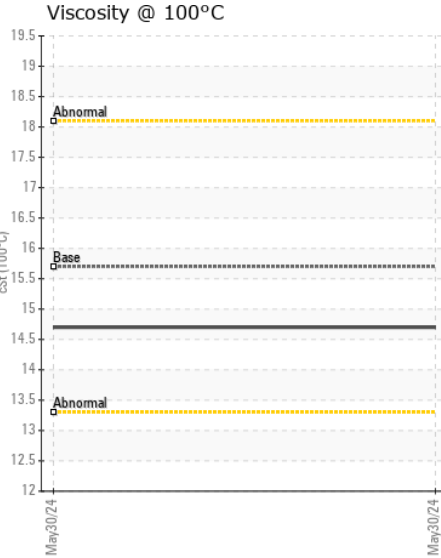
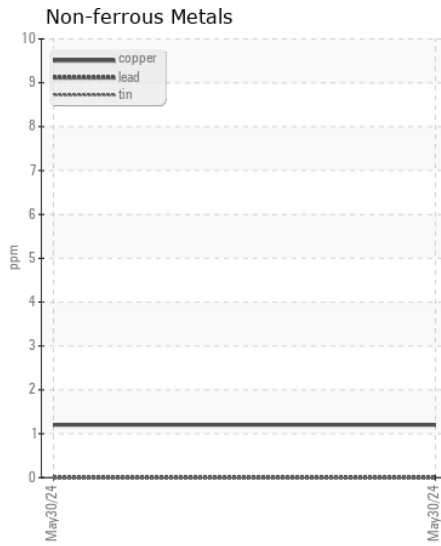
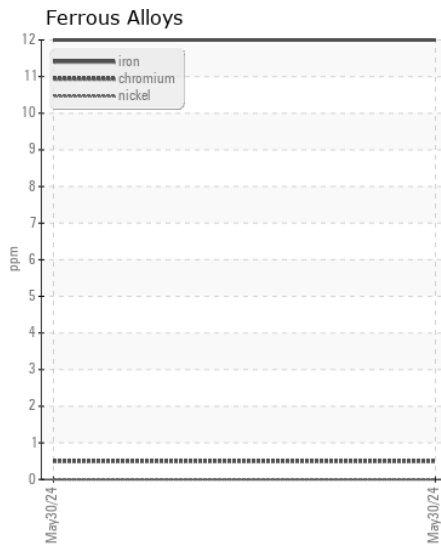
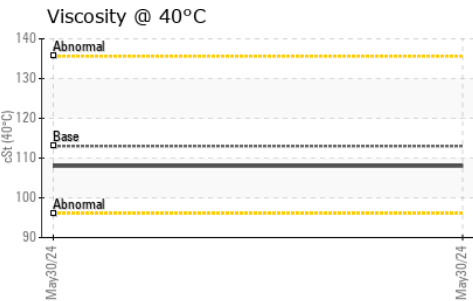
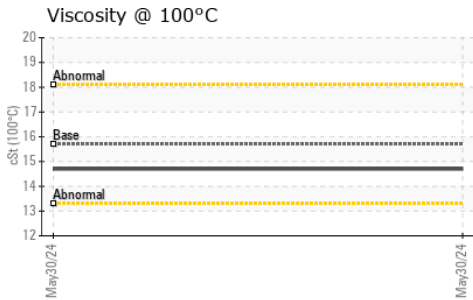
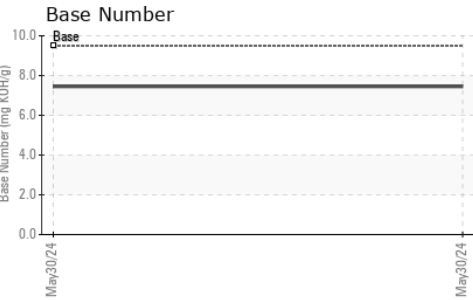
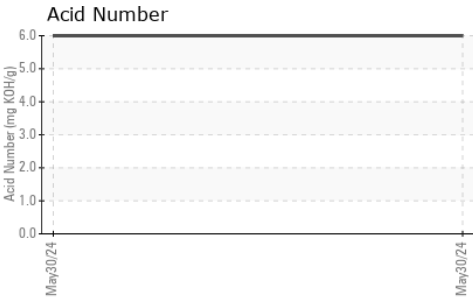
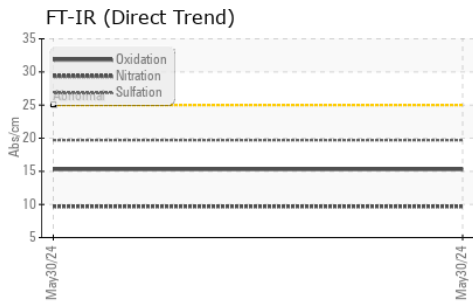
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>20	4	---	---
Potassium	ppm	ASTM D5185(m)	>20	<1	---	---
Fuel		WC Method	>4.0	<1.0	---	---
Water		WC Method	>0.1	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	ASTM D7844*		0.2	---	---
Nitration	Abs/cm	ASTM D7624*	>20	9.7	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	19.7	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.1	NEG	---	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)	>75	2	---	---
Boron	ppm	ASTM D5185(m)		30	---	---
Barium	ppm	ASTM D5185(m)		<1	---	---
Molybdenum	ppm	ASTM D5185(m)		87	---	---
Manganese	ppm	ASTM D5185(m)		<1	---	---
Magnesium	ppm	ASTM D5185(m)		48	---	---
Calcium	ppm	ASTM D5185(m)		2062	---	---
Phosphorus	ppm	ASTM D5185(m)		930	---	---
Zinc	ppm	ASTM D5185(m)		1111	---	---
Sulfur	ppm	ASTM D5185(m)		2976	---	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	15.3	---	---
Acid Number (AN)	mg KOH/g	ASTM D974*		6.00	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	9.5	7.45	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	113	108	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	14.7	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	140	140	---	---



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0834819
Lab Number : 02643599
Unique Number : 5801138
Test Package : MAR 2 (Additional Tests: KV40, TAN Auto, TAN Man, VI, Visual)

Received : 24 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Wes Davis

Niagara City Cruises (Hornblower)
 5775 River Road
 Niagara Falls, ON
 CA L2G 3K9
 Contact: Evan Dubblestyn
 evan.dubblestyn@cityexperiences.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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