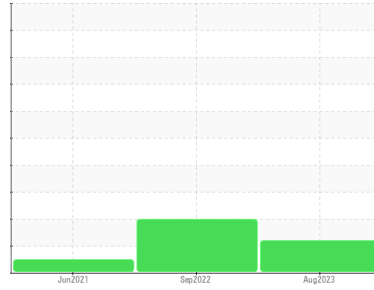




PROBLEM SUMMARY

Sample Rating Trend



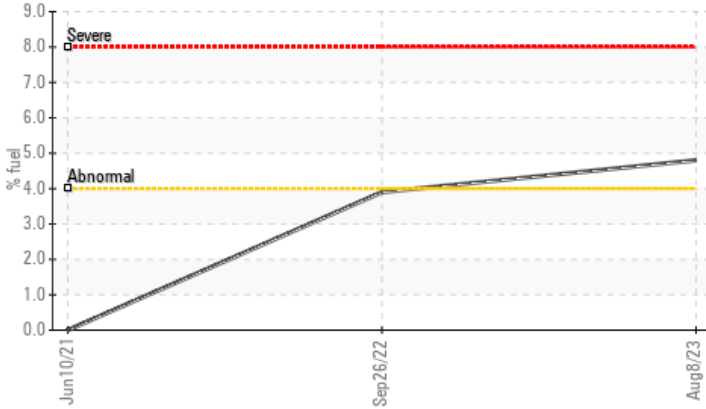
FUEL



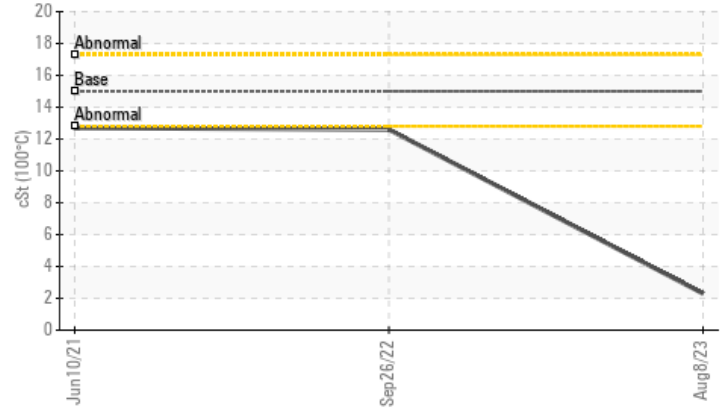
Machine Id
C06-5114 STARBOARD SHIP SERVICE GENERATOR (S/N 1512585114)
 Component
Starboard Diesel Engine
 Fluid
SHELL ROTELLA T4 15W40 (13 LTR)

COMPONENT CONDITION SUMMARY

▲ Fuel Dilution



▲ Viscosity @ 100°C



RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ATTENTION	NORMAL	
Fuel	%	ASTM D7593*	>4.0	▲ 4.8	▲ 3.9	<1.0
Visc @ 100°C	cSt	ASTM D7279(m)	15	▲ 2.3	12.6	12.7

Customer Id: COVEISLE
 Sample No.: WC0770691
 Lab Number: 02575098
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

26 Sep 2022 Diag: Wes Davis

FUEL



No corrective action is recommended at this time. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

[view report](#)



10 Jun 2021 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. Metal levels are typical for a component's first oil change. 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.

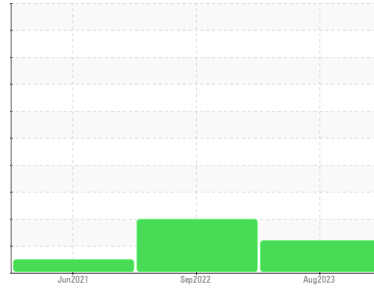
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
C06-5114 STARBOARD SHIP SERVICE GENERATOR (S/N 1512585114)
 Component
Starboard Diesel Engine
 Fluid
SHELL ROTELLA T4 15W40 (13 LTR)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0770691	WC0696351	WC0535371
Sample Date	Client Info	08 Aug 2023	26 Sep 2022	10 Jun 2021
Machine Age	hrs	2210	1528	512
Oil Age	hrs	500	625	512
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ATTENTION	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm	ASTM D5185(m) >80	4	6	10
Chromium ppm	ASTM D5185(m) >6	<1	0	<1
Nickel ppm	ASTM D5185(m) >2	0	0	0
Titanium ppm	ASTM D5185(m) >2	0	<1	<1
Silver ppm	ASTM D5185(m) >2	0	0	0
Aluminum ppm	ASTM D5185(m) >20	1	2	1
Lead ppm	ASTM D5185(m) >95	<1	2	20
Copper ppm	ASTM D5185(m) >85	3	30	655
Tin ppm	ASTM D5185(m) >9	0	<1	<1
Antimony ppm	ASTM D5185(m)	0	<1	<1
Vanadium ppm	ASTM D5185(m)	0	0	0
Beryllium ppm	ASTM D5185(m)	0	0	0
Cadmium ppm	ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm	ASTM D5185(m)	111	▲ 58	6
Barium ppm	ASTM D5185(m)	0	0	<1
Molybdenum ppm	ASTM D5185(m)	12	▲ 23	17
Manganese ppm	ASTM D5185(m)	<1	<1	1
Magnesium ppm	ASTM D5185(m)	12	▲ 20	232
Calcium ppm	ASTM D5185(m)	2152	2237	2102
Phosphorus ppm	ASTM D5185(m)	1004	933	889
Zinc ppm	ASTM D5185(m)	1169	1095	1114
Sulfur ppm	ASTM D5185(m)	2950	2851	2849
Lithium ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm	ASTM D5185(m) >25	4	5	16
Sodium ppm	ASTM D5185(m)	2	2	4
Potassium ppm	ASTM D5185(m) >20	6	4	3
Fuel %	ASTM D7593* >4.0	▲ 4.8	▲ 3.9	<1.0
Glycol %	ASTM D7922*	0.0	NEG	0.0

INFRA-RED

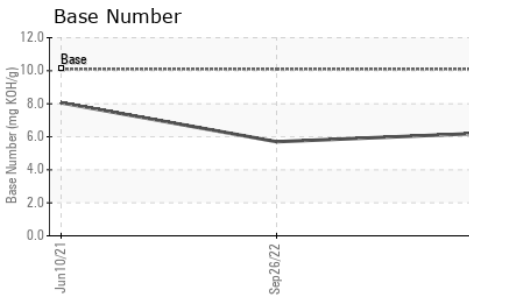
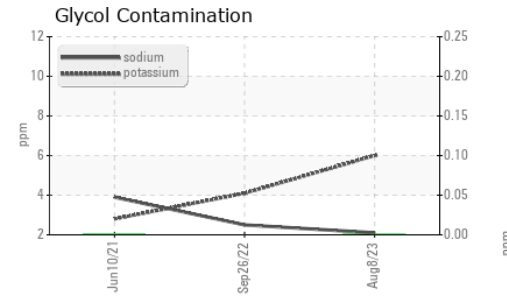
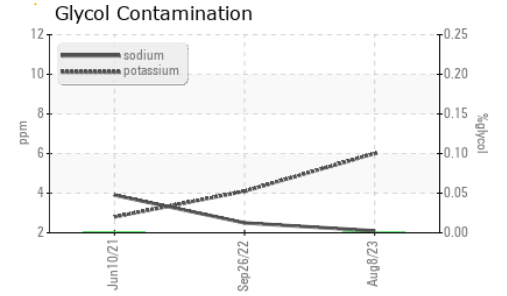
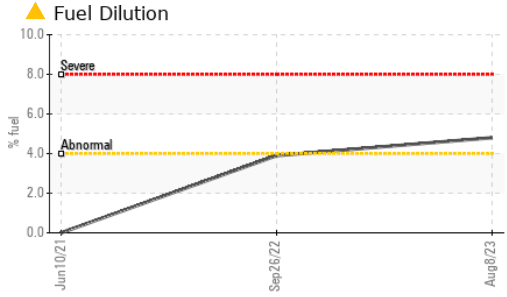
method	limit/base	current	history1	history2
Soot %	ASTM D7844*	0	0	0
Nitration Abs/cm	ASTM D7624* >20	9.1	9.2	8.8
Sulfation Abs/.1mm	ASTM D7415* >30	22.4	22.6	20.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation Abs/.1mm	ASTM D7414* >25	19.6	20.6	16.1
Base Number (BN) mg KOH/g	ASTM D2896* 10.1	6.24	5.70	8.06



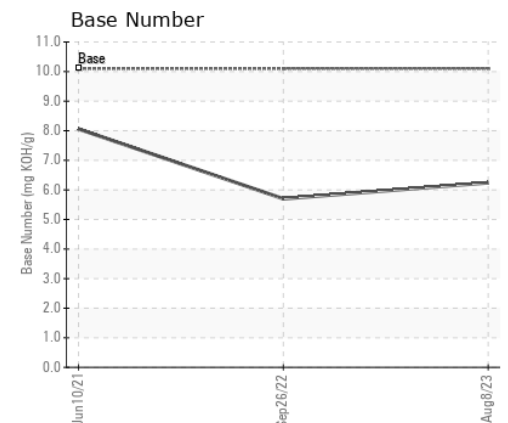
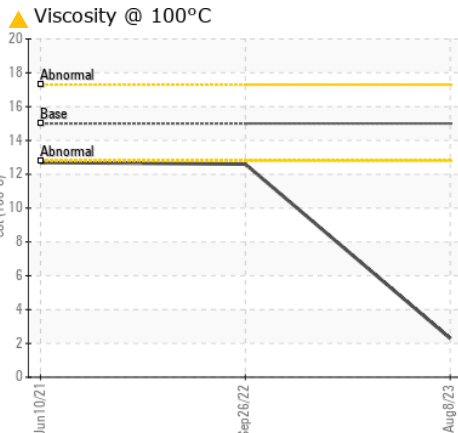
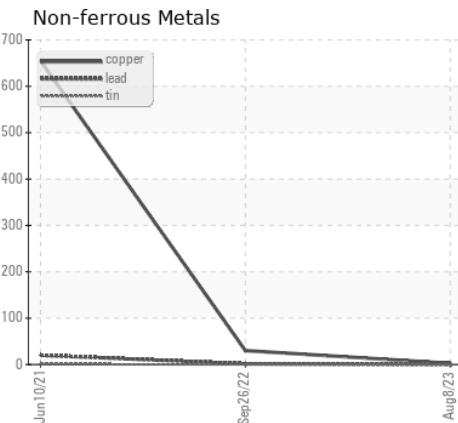
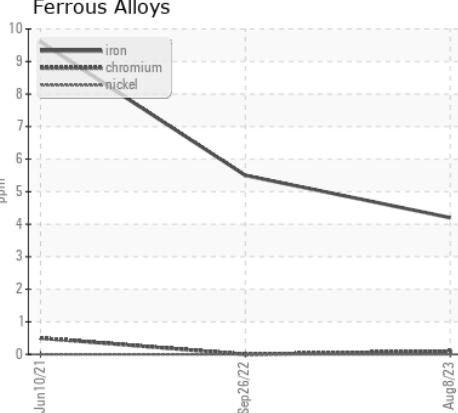
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15	▲ 2.3	12.6

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0770691 **Received** : 10 Aug 2023
Lab Number : 02575098 **Diagnosed** : 11 Aug 2023
Unique Number : 5620149 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: FuelDilution, Glycol, PercentFuel)

CANADIAN COAST GUARD
 CCGS COVE ISLE, 401 KING STREET WEST
 PRESCOTT, ON
 CA N9V 1X3
 Contact: Laurie Bosley
 Laurie.Bosley@dfo-mpo.gc.ca
 T:
 F: (519)383-1994

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.