MAR II

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Area
GENEV
Machine Id
ZF 20035710 - INBOARD
Component
Starboard Gearbox
Fluid
SHELL ROTELLA T 30 (2 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

WEAR

Bearing and/or bushing wear is indicated.

CONTAMINATION

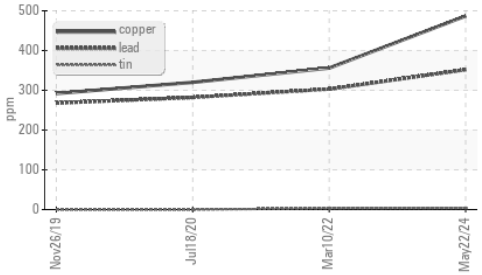
There is a light concentration of water present in the oil.

FLUID CONDITION

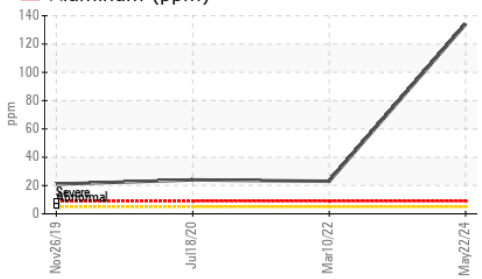
The AN level is at the top-end of the recommended limit.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0839378	WC0563117	VPA019856
Sample Date		Client Info		22 May 2024	10 Mar 2022	18 Jul 2020
Machine Age	hrs	Client Info		1099	0	778
Oil Age	hrs	Client Info		300	0	0
Filter Age	hrs	Client Info		300	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>150	42	34	26
Chromium	ppm	ASTM D5185m	>10	0	<1	<1
Nickel	ppm	ASTM D5185m	>10	<1	0	1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	1	0
Aluminum	ppm	ASTM D5185m	>5	▲ 134	23	24
Lead	ppm	ASTM D5185m	>65	▲ 352	303	282
Copper	ppm	ASTM D5185m	>80	▲ 487	356	320
Tin	ppm	ASTM D5185m	>8	4	3	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	8	6	7
Potassium	ppm	ASTM D5185m	>20	1	4	2
Water	%	ASTM D6304	>0.2	▲ 0.282	---	---
ppm Water	ppm	ASTM D6304	>2000	▲ 2820	---	---
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	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	>0.2	0.2%	NEG	NEG
Sodium	ppm	ASTM D5185m		2	<1	2
Boron	ppm	ASTM D5185m	0	56	64	61
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m	0	38	39	34
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		444	455	407
Calcium	ppm	ASTM D5185m	1890	1707	1710	1529
Phosphorus	ppm	ASTM D5185m	680	963	1019	891
Zinc	ppm	ASTM D5185m	750	988	1145	999
Sulfur	ppm	ASTM D5185m		4074	3537	3009
Acid Number (AN)	mg KOH/g	ASTM D8045		▲ 2.47	0.99	---
Visc @ 40°C	cSt	ASTM D445	97.7	94.7	95.2	96.0

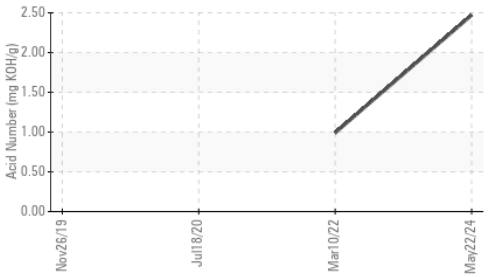
Non-ferrous Metals



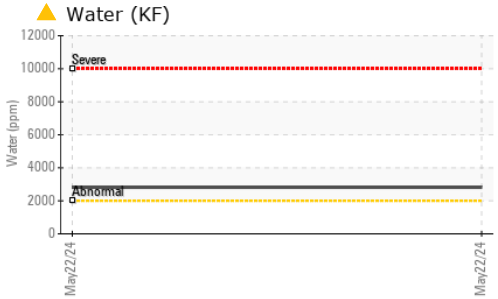
Aluminum (ppm)



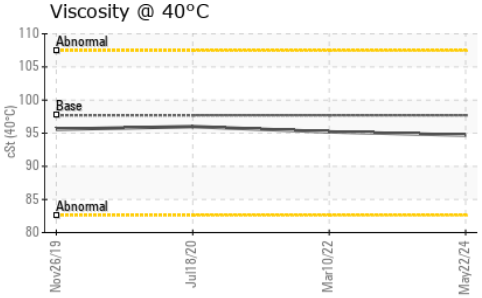
Acid Number



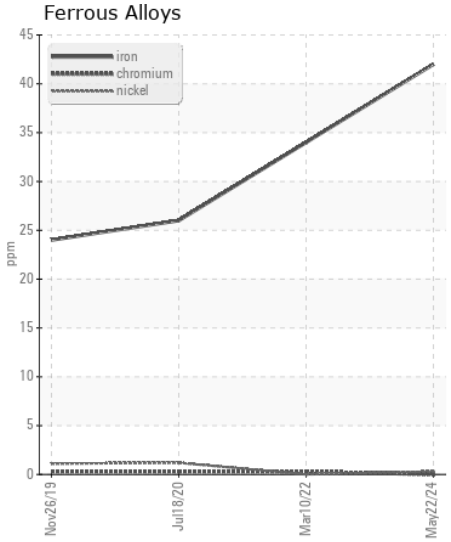
Water (KF)



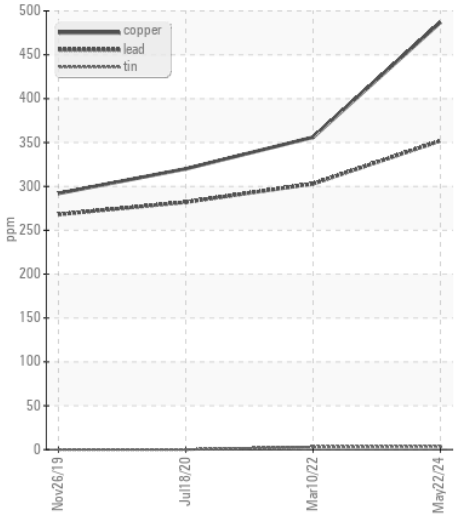
Viscosity @ 40°C



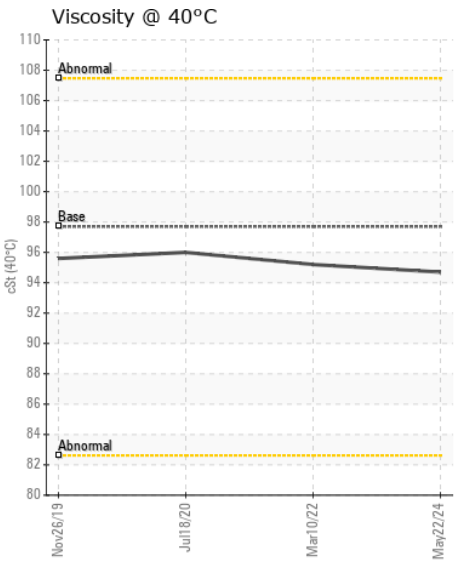
Ferrous Alloys



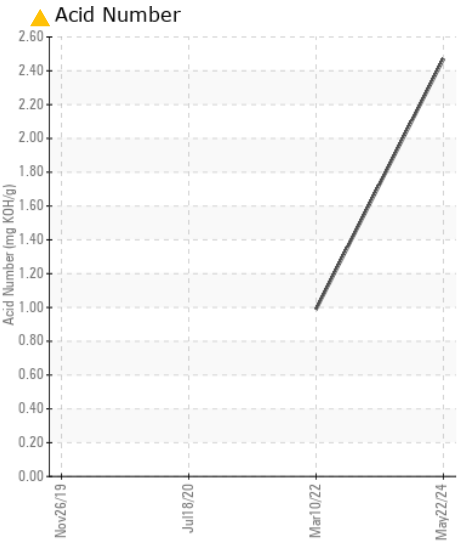
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0839378 **Received** : 30 May 2024
Lab Number : 06195991 **Tested** : 03 Jun 2024
Unique Number : 11058114 **Diagnosed** : 04 Jun 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: KF)

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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