MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
LES GRIMM
Machine Id
[LES GRIMM] 008 569145-8
Component
Starboard Genset
Fluid
CHEVRON DELO 400 LE 15W40 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

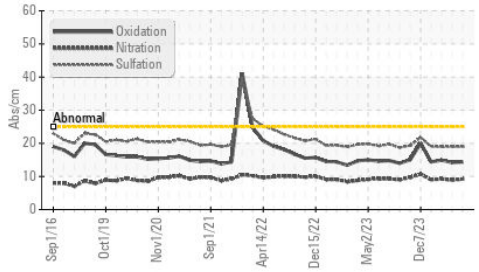
There is no indication of any contamination in the oil.

FLUID CONDITION

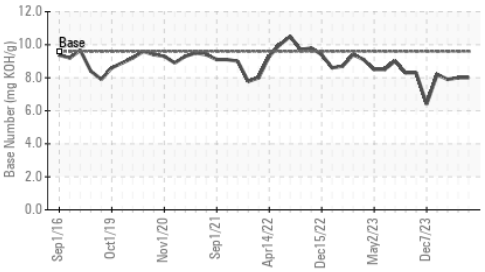
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0068716	MW0058532	MW0051475
Sample Date		Client Info		22 Apr 2024	19 Mar 2024	19 Feb 2024
Machine Age	hrs	Client Info		4967	4562	4224
Oil Age	hrs	Client Info		395	338	408
Filter Age	hrs	Client Info		395	338	408
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	14	10	9
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		17	15	14
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	2	1	1
Lead	ppm	ASTM D5185m	>17	<1	0	0
Copper	ppm	ASTM D5185m	>70	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	4	3	4
Potassium	ppm	ASTM D5185m	>20	5	4	2
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		0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.2	8.9	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	19.0	18.9
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	>0.1	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		<1	2	2
Boron	ppm	ASTM D5185m		90	88	78
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		33	34	29
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		668	770	682
Calcium	ppm	ASTM D5185m		1527	1765	1458
Phosphorus	ppm	ASTM D5185m	1200	710	812	731
Zinc	ppm	ASTM D5185m	1300	836	928	820
Sulfur	ppm	ASTM D5185m	3200	3408	3894	2938
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	14.2	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	8.0	8.0	7.9
Visc @ 100°C	cSt	ASTM D445	15.7	13.6	13.8	13.6

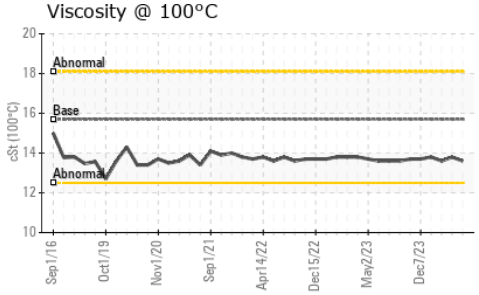
FT-IR (Direct Trend)



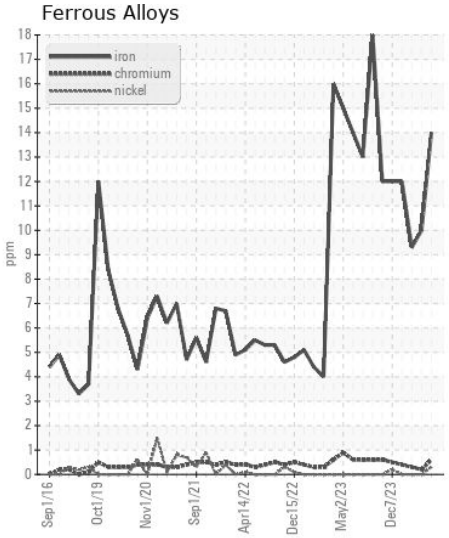
Base Number



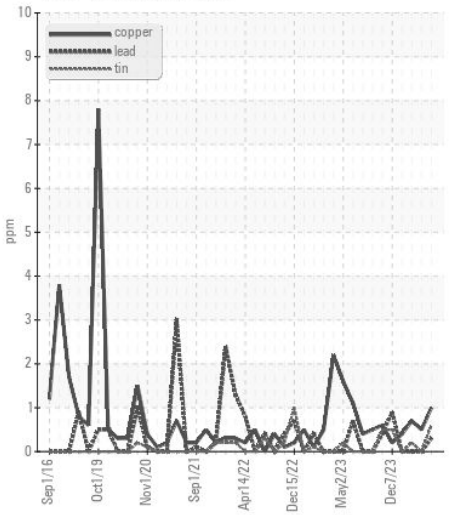
Viscosity @ 100°C



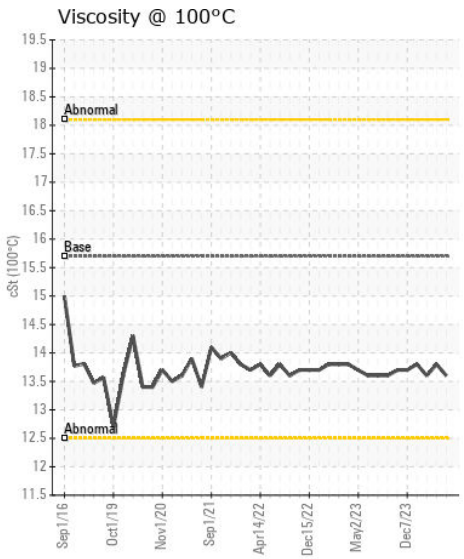
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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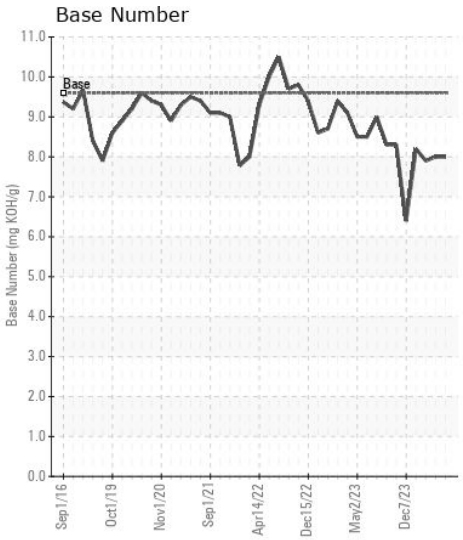

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0068716
Lab Number : 06178210
Unique Number : 11029536
Test Package : MAR 2

Received : 13 May 2024
Tested : 15 May 2024
Diagnosed : 15 May 2024 - Sean Felton

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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