MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LESTER CRUSE
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

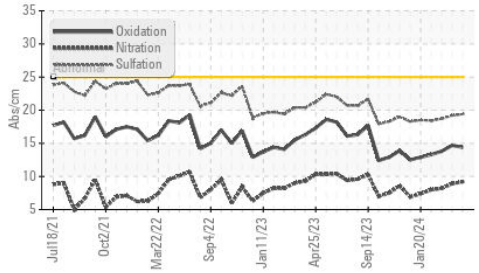
There is no indication of any contamination in the oil.

FLUID CONDITION

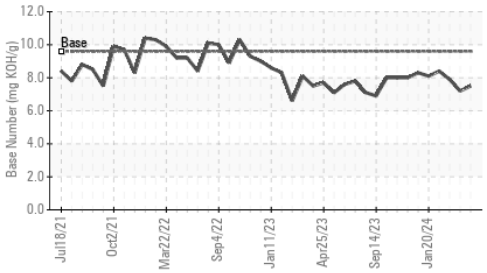
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067329	MW0067152	MW0061993
Sample Date		Client Info		02 May 2024	08 Apr 2024	22 Mar 2024
Machine Age	hrs	Client Info		51653	51230	50873
Oil Age	hrs	Client Info		500	488	500
Filter Age	hrs	Client Info		500	488	500
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>120	6	6	3
Chromium	ppm	ASTM D5185m	>10	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m		14	14	14
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>300	23	22	13
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	4	4	4
Potassium	ppm	ASTM D5185m	>20	4	3	4
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	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.2	8.9	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	19.2	18.7
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		3	3	2
Boron	ppm	ASTM D5185m		75	80	101
Barium	ppm	ASTM D5185m		<1	1	<1
Molybdenum	ppm	ASTM D5185m		35	35	36
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		671	666	682
Calcium	ppm	ASTM D5185m		1478	1416	1491
Phosphorus	ppm	ASTM D5185m	1200	715	645	697
Zinc	ppm	ASTM D5185m	1300	795	755	807
Sulfur	ppm	ASTM D5185m	3200	2790	2825	3011
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	14.7	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	7.5	7.2	7.9
Visc @ 100°C	cSt	ASTM D445	15.7	13.8	13.8	13.9

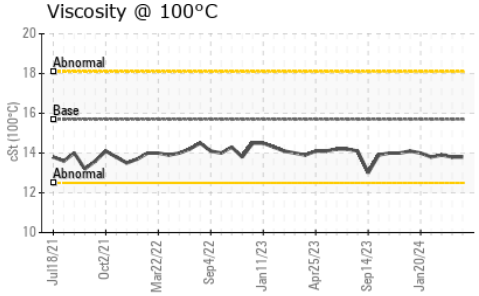
FT-IR (Direct Trend)



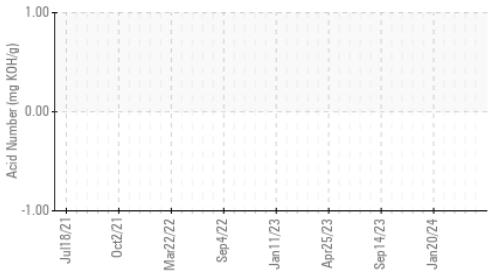
Base Number



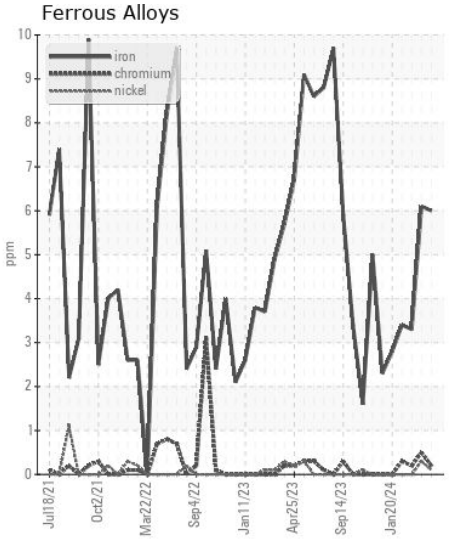
Viscosity @ 100°C



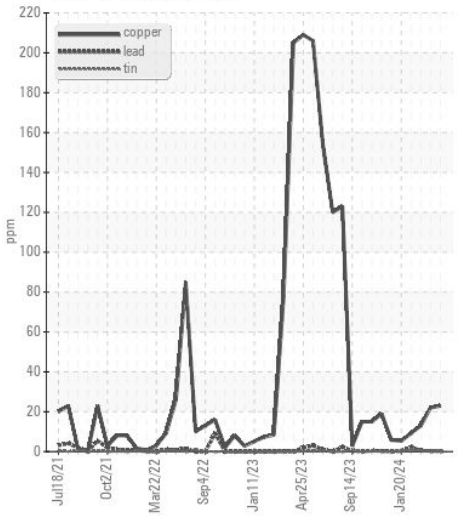
Acid Number



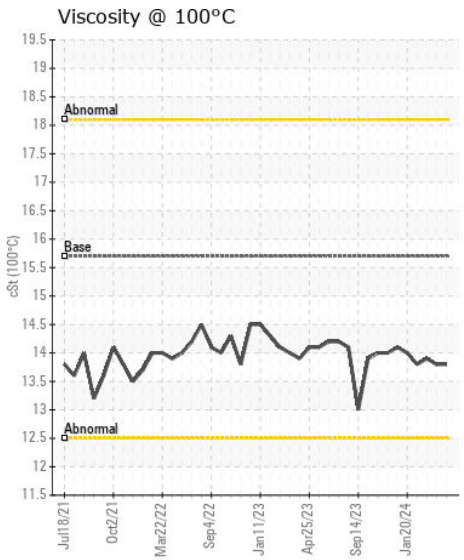
Ferrous Alloys



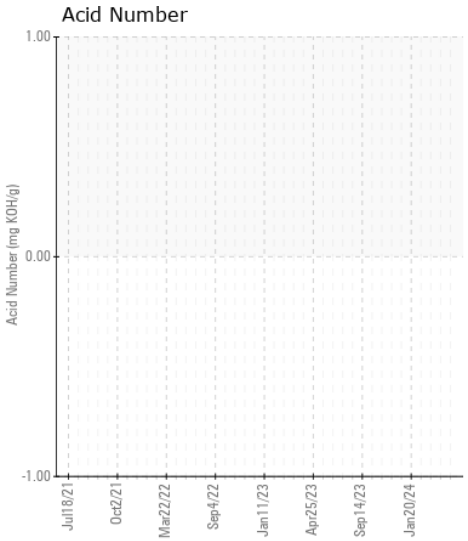
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067329
Lab Number : 06212949
Unique Number : 11085813
Test Package : MAR 2 (Additional Tests: TAN Man)

Received : 17 Jun 2024
Tested : 19 Jun 2024
Diagnosed : 19 Jun 2024 - Angela Borella

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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