MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
DOROTHY ELISE
Component
Port Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

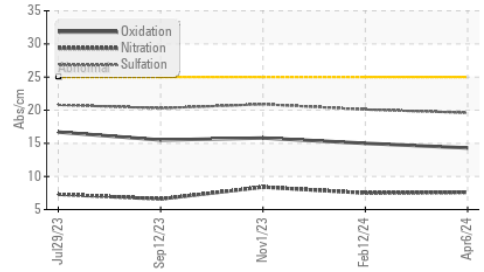
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

FLUID CONDITION

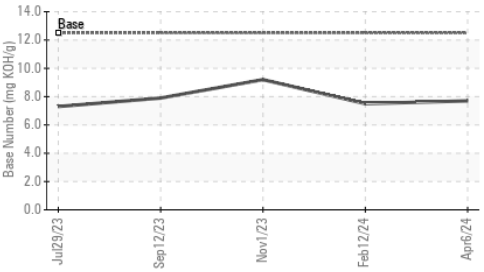
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067226	MW0056320	MW0056796
Sample Date		Client Info		06 Apr 2024	12 Feb 2024	01 Nov 2023
Machine Age	hrs	Client Info		0	11972	10524
Oil Age	hrs	Client Info		0	100	1450
Filter Age	hrs	Client Info		0	100	430
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		Not Changd	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	6	5	6
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	9	7	3
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	1	1
Lead	ppm	ASTM D5185m	>18	0	<1	<1
Copper	ppm	ASTM D5185m	>80	13	9	11
Tin	ppm	ASTM D5185m	>14	<1	0	<1
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	4	3	3
Potassium	ppm	ASTM D5185m	>20	4	2	5
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	0.9
Nitration	Abs/cm	*ASTM D7624	>20	7.6	7.5	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	20.1	20.9
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	>75	2	1	2
Boron	ppm	ASTM D5185m	151	174	131	168
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	38	37	37
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	0	518	528	277
Calcium	ppm	ASTM D5185m	2046	1635	1775	1789
Phosphorus	ppm	ASTM D5185m	1043	827	838	843
Zinc	ppm	ASTM D5185m	943	924	1026	1055
Sulfur	ppm	ASTM D5185m	5012	3321	3406	3158
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.3	15.0	15.8
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.7	7.5	9.2
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	13.8	13.8

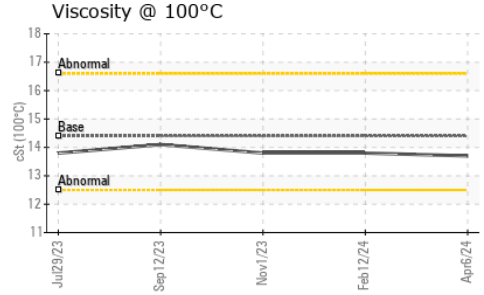
FT-IR (Direct Trend)



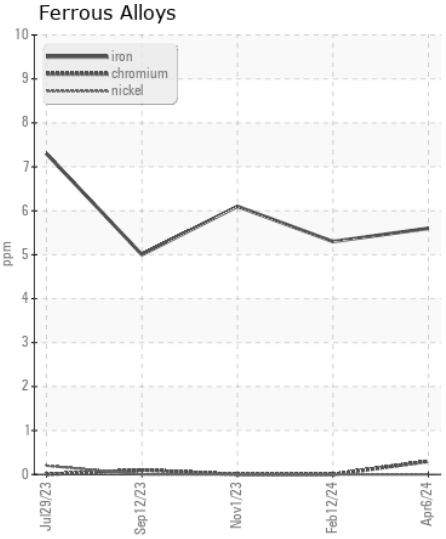
Base Number



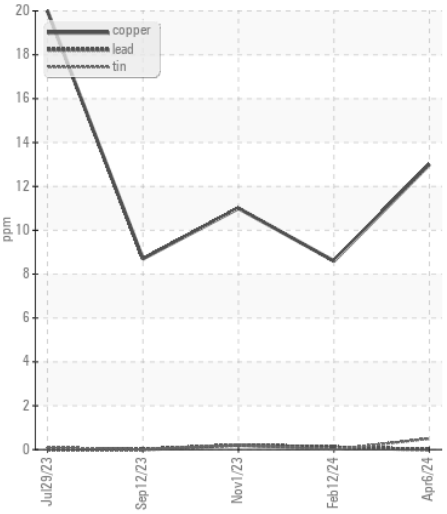
Viscosity @ 100°C



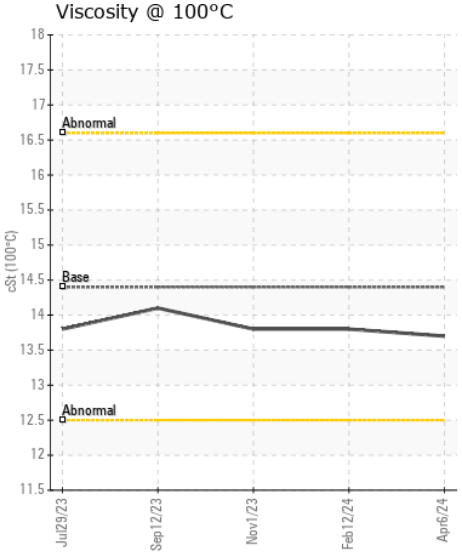
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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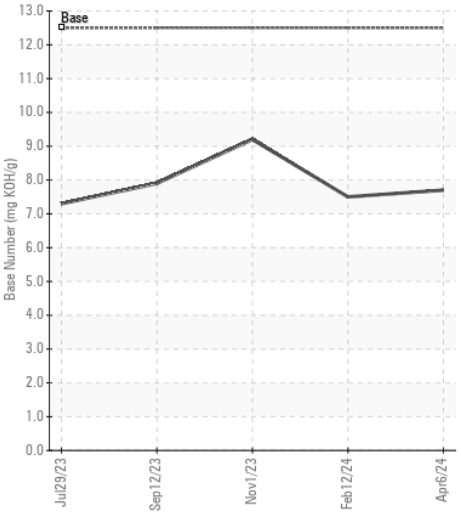

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067226
Lab Number : 06174911
Unique Number : 11020964
Test Package : MAR 2

Received : 09 May 2024
Tested : 10 May 2024
Diagnosed : 10 May 2024 - Wes Davis

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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