MAR II

WEAR CHECK
Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MISS ELLIE
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

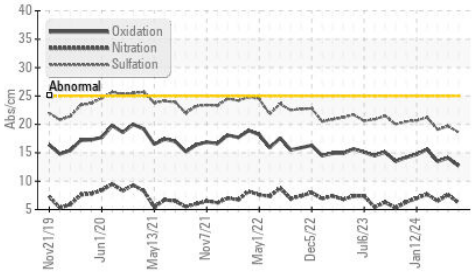
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

FLUID CONDITION

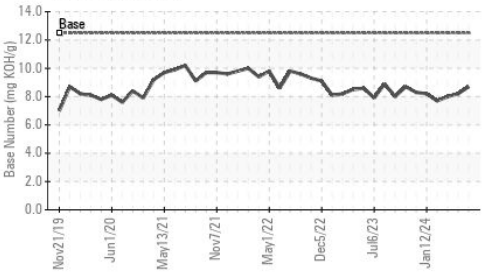
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**MW0044344**	MW0044341	MW0044337
Sample Date		Client Info		**17 Apr 2024**	27 Mar 2024	02 Mar 2024
Machine Age	hrs	Client Info		**40310**	39816	39368
Oil Age	hrs	Client Info		**495**	912	464
Filter Age	hrs	Client Info		**495**	230	464
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Filter Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	**2**	4	1
Chromium	ppm	ASTM D5185m	>8	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	0
Titanium	ppm	ASTM D5185m	>3	**13**	11	10
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>15	**2**	2	3
Lead	ppm	ASTM D5185m	>18	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>80	**1**	6	<1
Tin	ppm	ASTM D5185m	>14	**<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	>20	**4**	4	4
Potassium	ppm	ASTM D5185m	>20	**4**	4	3
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**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**6.2**	7.6	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.6**	19.7	19.1
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	**<1**	0	2
Boron	ppm	ASTM D5185m	151	**168**	199	197
Barium	ppm	ASTM D5185m	0.4	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	250	**48**	66	63
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	0	**667**	659	656
Calcium	ppm	ASTM D5185m	2046	**1456**	1476	1477
Phosphorus	ppm	ASTM D5185m	1043	**700**	703	719
Zinc	ppm	ASTM D5185m	943	**816**	830	821
Sulfur	ppm	ASTM D5185m	5012	**3418**	3201	3001
Oxidation	Abs/.1mm	*ASTM D7414	>25	**12.7**	14.1	13.5
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	**8.7**	8.2	8.0
Visc @ 100°C	cSt	ASTM D445	14.4	**14.0**	13.7	13.8

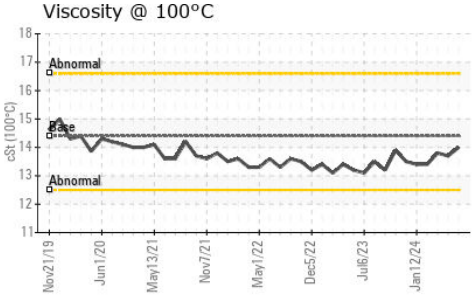
FT-IR (Direct Trend)



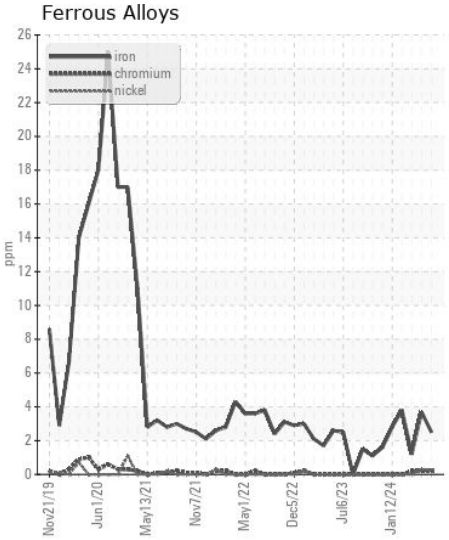
Base Number



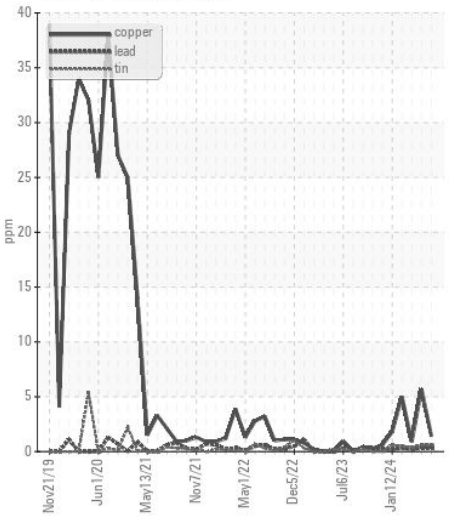
Viscosity @ 100°C



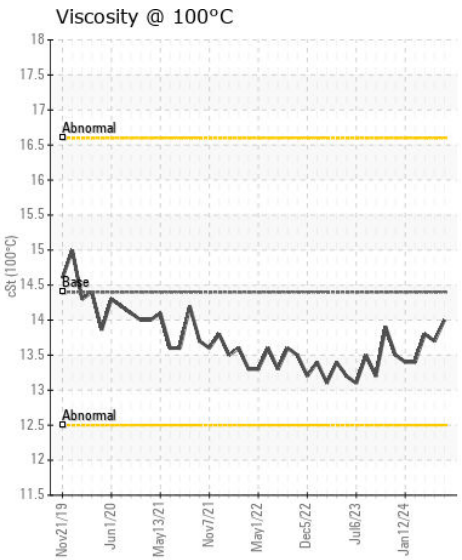
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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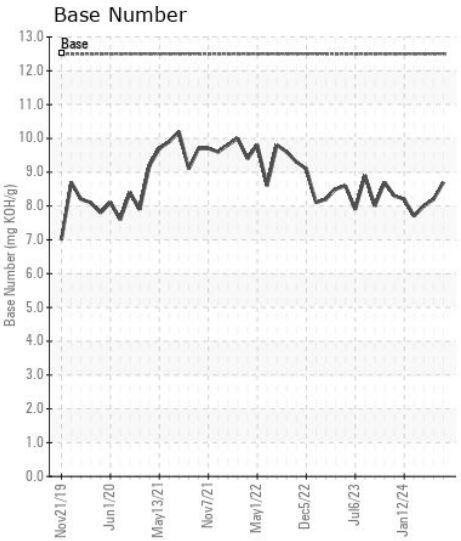

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0044344
Lab Number : 06178231
Unique Number : 11029557
Test Package : MAR 2

Received : 13 May 2024
Tested : 15 May 2024
Diagnosed : 15 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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