MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CWR
Component
Starboard Genset
Fluid
CHEVRON URSA SUPER PLUS 40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

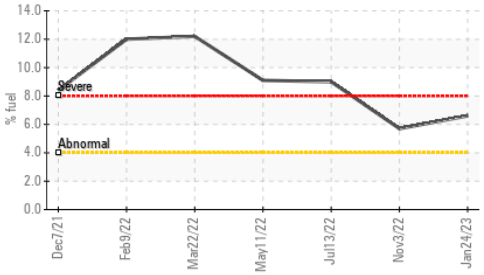
There is a moderate amount of fuel present in the oil.

FLUID CONDITION

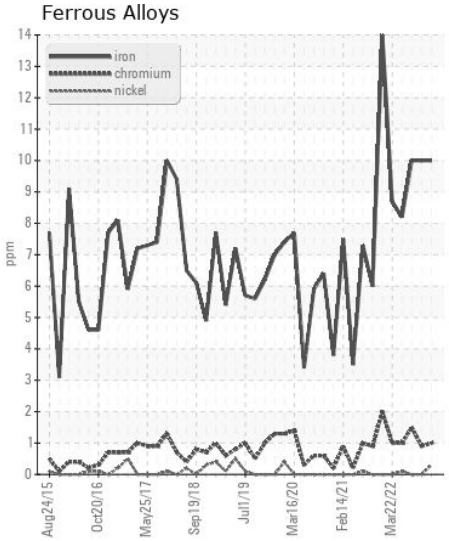
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW05749257	MW05685053	MW05591031
Sample Date		Client Info		24 Jan 2023	03 Nov 2022	13 Jul 2022
Machine Age	hrs	Client Info		25250	24895	24157
Oil Age	hrs	Client Info		355	738	555
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	SEVERE
Iron	ppm	ASTM D5185m	>25	10	10	10
Chromium	ppm	ASTM D5185m	>5	1	<1	2
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m		2	4	4
Silver	ppm	ASTM D5185m	>5	0	0	<1
Aluminum	ppm	ASTM D5185m	>10	4	2	3
Lead	ppm	ASTM D5185m	>10	1	1	1
Copper	ppm	ASTM D5185m	>20	<1	<1	<1
Tin	ppm	ASTM D5185m	>5	<1	<1	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	>25	6	5	6
Potassium	ppm	ASTM D5185m	>20	1	2	0
Fuel	%	ASTM D3524	>4.0	▲ 6.6	▲ 5.7	▲ 9.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	10.2	12.7	13.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.3	27.7	27.0
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		0	2	1
Boron	ppm	ASTM D5185m		268	196	195
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		95	87	90
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		574	628	683
Calcium	ppm	ASTM D5185m		1661	1609	1578
Phosphorus	ppm	ASTM D5185m	1000	727	786	706
Zinc	ppm	ASTM D5185m	1090	910	996	915
Sulfur	ppm	ASTM D5185m		2885	3250	3109
Oxidation	Abs/.1mm	*ASTM D7414	>25	26.1	31.7	32.4
Base Number (BN)	mg KOH/g	ASTM D2896	7.4	6.9	7.8	7.2
Visc @ 100°C	cSt	ASTM D445	14.7	▲ 11.8	▲ 12.3	12.5

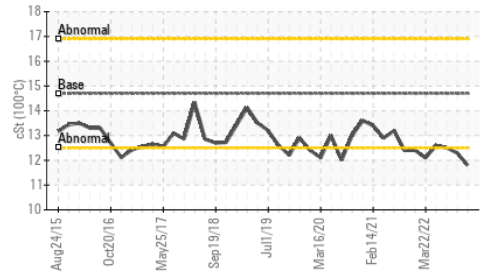
Fuel Dilution



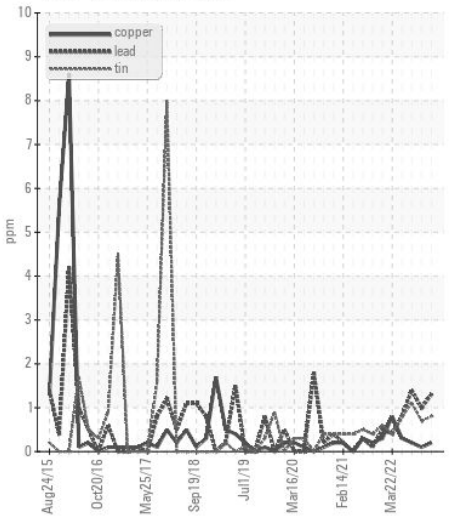
Ferrous Alloys



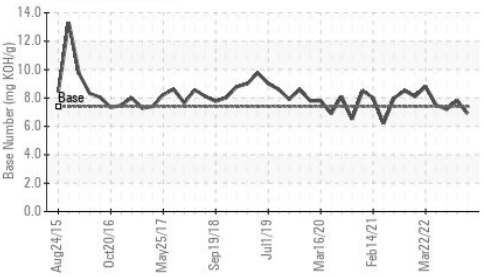
Viscosity @ 100°C



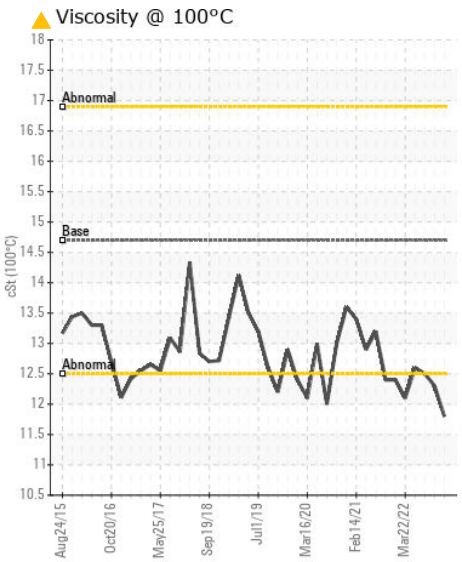
Non-ferrous Metals



Base Number



Viscosity @ 100°C



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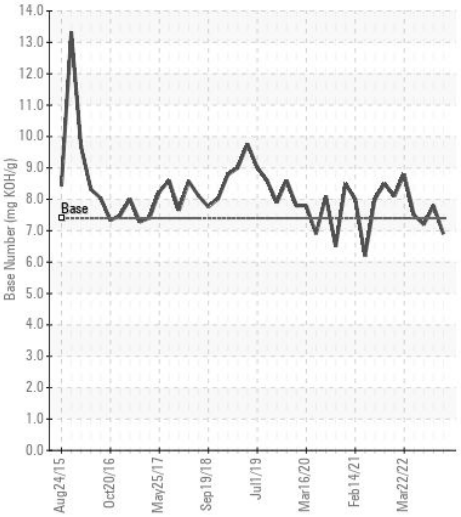

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW05749257
Lab Number : 05749257
Unique Number : 10308861
Test Package : MAR 2 (Additional Tests: PercentFuel)

Received : 25 Jan 2023
Tested : 26 Jan 2023
Diagnosed : 26 Jan 2023 - Don Baldridge

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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