MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
DALE ROBINS
Component
Starboard Main Engine
Fluid
CHEVRON URSA SUPER PLUS 40 (17 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

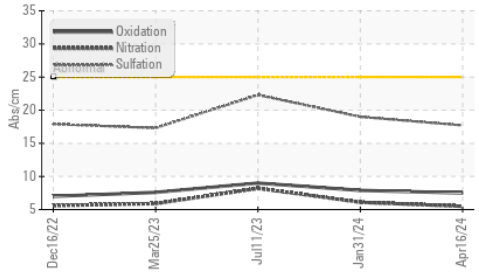
There is no indication of any contamination in the oil.

FLUID CONDITION

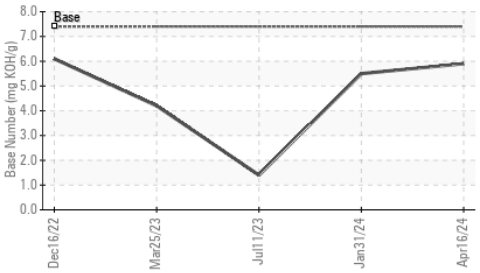
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0047379	MW0047403	MW0036431
Sample Date		Client Info		16 Apr 2024	31 Jan 2024	11 Jul 2023
Machine Age	hrs	Client Info		6912	6304	5760
Oil Age	hrs	Client Info		544	512	544
Filter Age	hrs	Client Info		544	512	544
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>75	49	62	62
Chromium	ppm	ASTM D5185m	>8	1	2	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	2
Lead	ppm	ASTM D5185m	>18	<1	1	1
Copper	ppm	ASTM D5185m	>80	0	2	2
Tin	ppm	ASTM D5185m	>14	6	8	7
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	6	6	5
Potassium	ppm	ASTM D5185m	>20	<1	0	0
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		2	2.7	4.1
Nitration	Abs/cm	*ASTM D7624	>20	5.5	6.1	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.7	19.0	22.3
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	3	4	2
Boron	ppm	ASTM D5185m		294	276	291
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		33	32	34
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		19	24	30
Calcium	ppm	ASTM D5185m		2594	2502	2648
Phosphorus	ppm	ASTM D5185m	1000	691	664	670
Zinc	ppm	ASTM D5185m	1090	803	797	818
Sulfur	ppm	ASTM D5185m		2930	2402	3070
Oxidation	Abs/.1mm	*ASTM D7414	>25	7.5	7.9	9.0
Base Number (BN)	mg KOH/g	ASTM D2896	7.4	5.9	5.5	▲ 1.4
Visc @ 100°C	cSt	ASTM D445	14.7	15.1	15.5	16.4

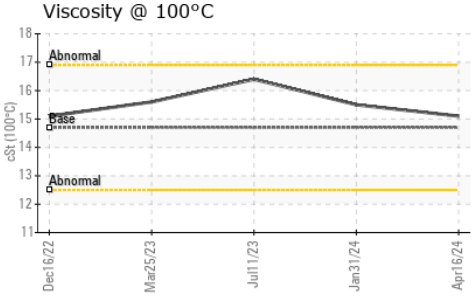
FT-IR (Direct Trend)



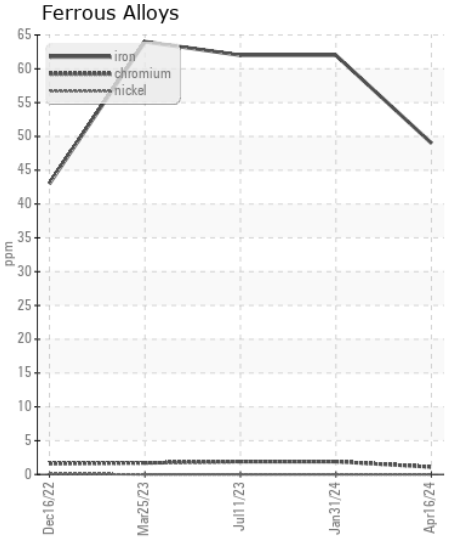
Base Number



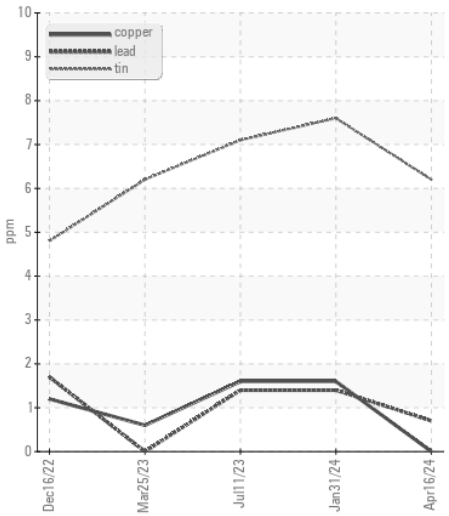
Viscosity @ 100°C



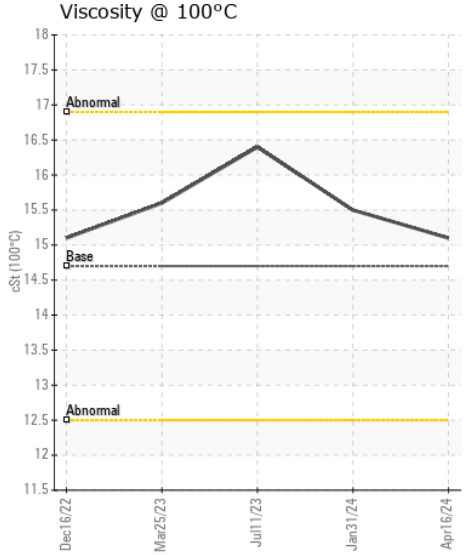
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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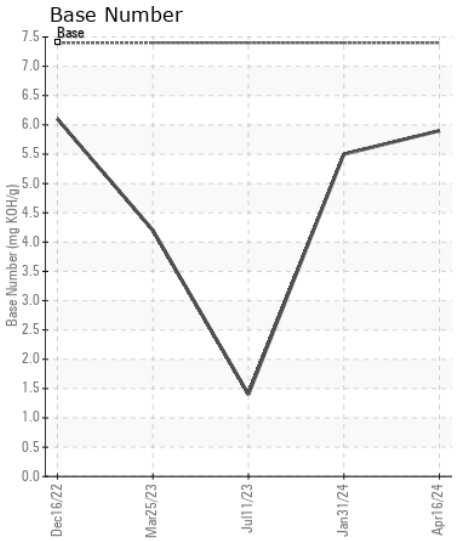

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0047379
Lab Number : 06157285
Unique Number : 10992708
Test Package : MAR 2

Received : 23 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 25 Apr 2024 - Jonathan Hester

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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