MAR II

WEAR CHECK
Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SIGNET RELIANCE
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (212 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

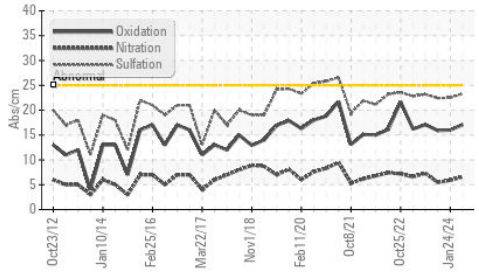
There is no indication of any contamination in the component.

FLUID CONDITION

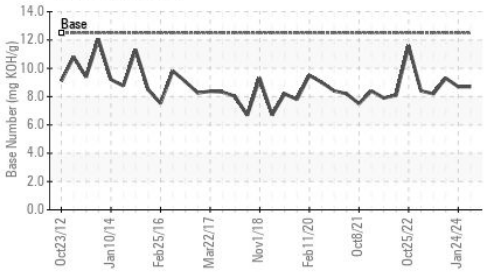
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0052113	MW0034672	MW0051916
Sample Date		Client Info		11 Apr 2024	24 Jan 2024	23 Nov 2023
Machine Age	hrs	Client Info		26506	26260	25978
Oil Age	hrs	Client Info		839	595	338
Filter Age	hrs	Client Info		839	595	338
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	3	<1	1
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>18	1	0	<1
Copper	ppm	ASTM D5185m	>80	2	<1	<1
Tin	ppm	ASTM D5185m	>14	1	0	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	6	5	4
Potassium	ppm	ASTM D5185m	>20	2	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		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.6	5.9	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.3	22.5	22.4
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	1	<1
Boron	ppm	ASTM D5185m	151	401	355	337
Barium	ppm	ASTM D5185m	0.4	<1	<1	<1
Molybdenum	ppm	ASTM D5185m	250	130	115	123
Manganese	ppm	ASTM D5185m		1	0	<1
Magnesium	ppm	ASTM D5185m	0	616	622	682
Calcium	ppm	ASTM D5185m	2046	1495	1517	1572
Phosphorus	ppm	ASTM D5185m	1043	738	725	786
Zinc	ppm	ASTM D5185m	943	829	850	867
Sulfur	ppm	ASTM D5185m	5012	2756	2525	2731
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	16.0	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	8.7	8.7	9.3
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.7	14.1

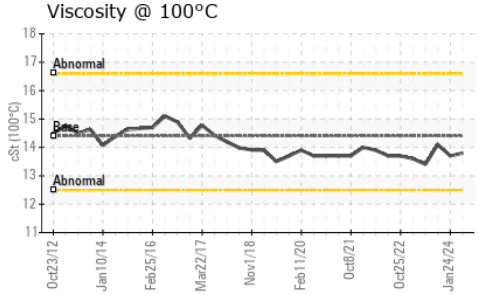
FT-IR (Direct Trend)



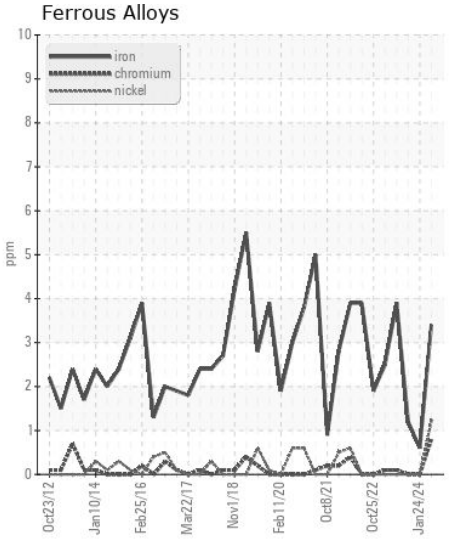
Base Number



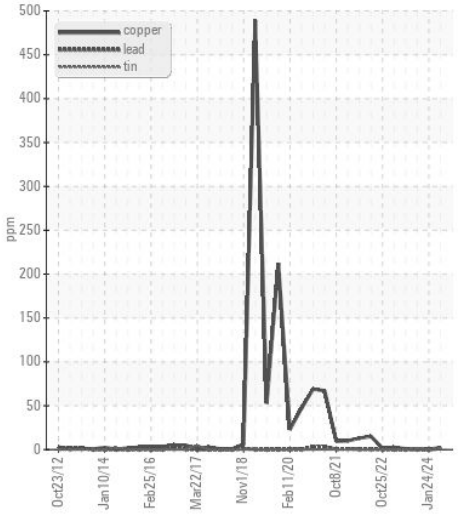
Viscosity @ 100°C



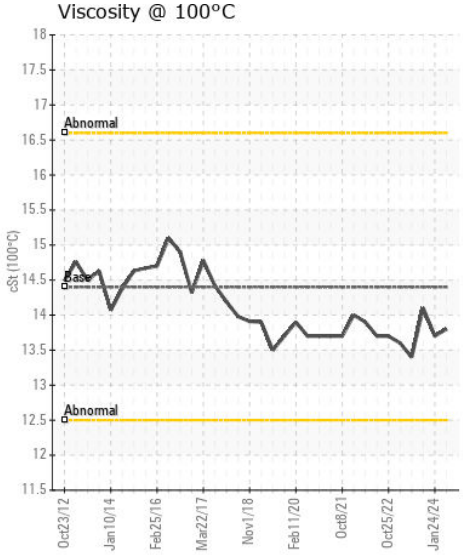
Ferrous Alloys



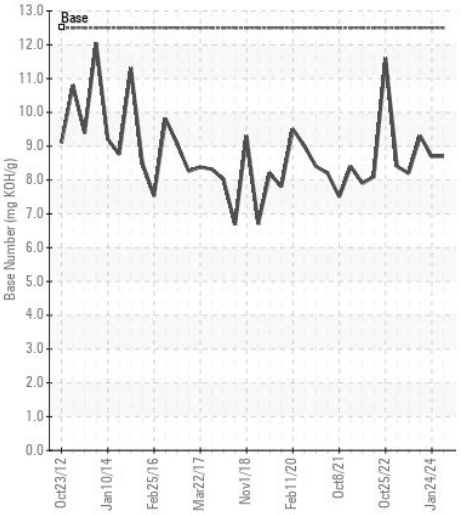
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0052113
Lab Number : 06152770
Unique Number : 10982848
Test Package : MAR 2

Received : 18 Apr 2024
Tested : 18 Apr 2024
Diagnosed : 22 Apr 2024 - 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)

MARITIME COMPANY
3802 PORT RIVER RD
PASCAGOULA, MS
US 39567
Contact: TERRY SCUDDER
terry.scudder@signetmaritime.com
T:
F: (228)769-0629