MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Area
RICH MCCARTY
Machine Id
RICH MCCARTY
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LS (350 GAL)

RECOMMENDATION

We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

WEAR

Bearing and/or bushing wear is indicated.

CONTAMINATION

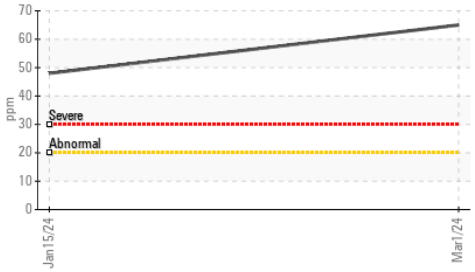
The high sodium (Na) level indicates the possible presence of salt water. Elemental level of sodium (Na) and/or boron (B) indicates a possible cooling water leak. Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

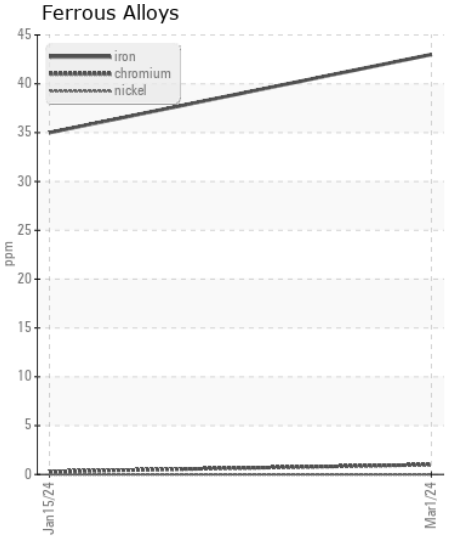
The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0057724	MW0057627	---
Sample Date		Client Info		01 Mar 2024	15 Jan 2024	---
Machine Age	hrs	Client Info		41711	40615	---
Oil Age	hrs	Client Info		4239	3167	---
Filter Age	hrs	Client Info		1372	376	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Not Changd	Changed	---
Sample Status				SEVERE	SEVERE	---
Iron	ppm	ASTM D5185m	>75	43	35	---
Chromium	ppm	ASTM D5185m	>8	1	<1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>3	<1	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>15	3	3	---
Lead	ppm	ASTM D5185m	>18	▲ 26	▲ 28	---
Copper	ppm	ASTM D5185m	>80	▲ 28	▲ 30	---
Tin	ppm	ASTM D5185m	>14	3	4	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---
Silicon	ppm	ASTM D5185m	>20	▲ 65	▲ 48	---
Potassium	ppm	ASTM D5185m	>20	▲ 20	9	---
Fuel		WC Method	>4.0	<1.0	<1.0	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol	%	*ASTM D2982		NEG	NEG	---
Soot %	%	*ASTM D7844		1	0.8	---
Nitration	Abs/cm	*ASTM D7624	>20	8.5	10.3	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	15.6	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---
Sodium	ppm	ASTM D5185m	>75	▲ 715	▲ 586	---
Boron	ppm	ASTM D5185m		102	129	---
Barium	ppm	ASTM D5185m		0	<1	---
Molybdenum	ppm	ASTM D5185m		44	42	---
Manganese	ppm	ASTM D5185m		<1	1	---
Magnesium	ppm	ASTM D5185m		91	43	---
Calcium	ppm	ASTM D5185m		2188	2075	---
Phosphorus	ppm	ASTM D5185m		19	5	---
Zinc	ppm	ASTM D5185m		28	17	---
Sulfur	ppm	ASTM D5185m		2590	1976	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	8.0	9.0	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	4.9	8.8	---
Visc @ 100°C	cSt	ASTM D445	15.5	13.3	14.11	---

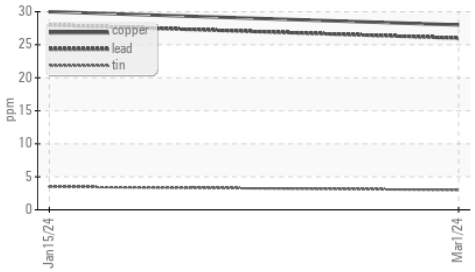
Silicon (ppm)



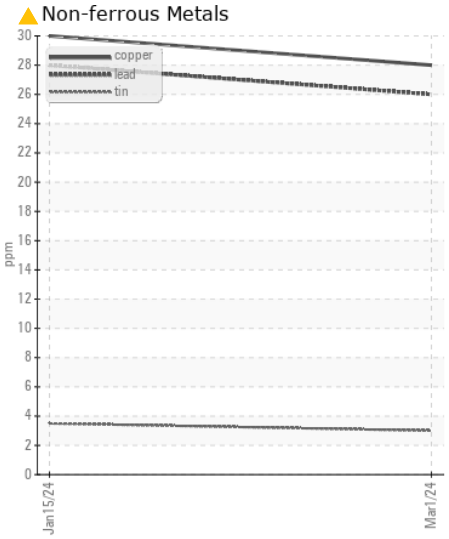
Ferrous Alloys



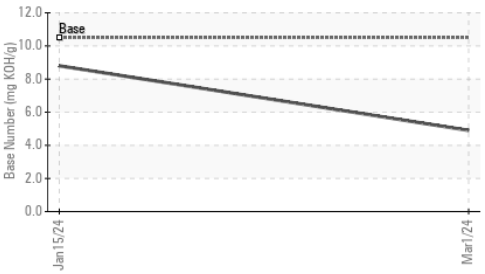
Non-ferrous Metals



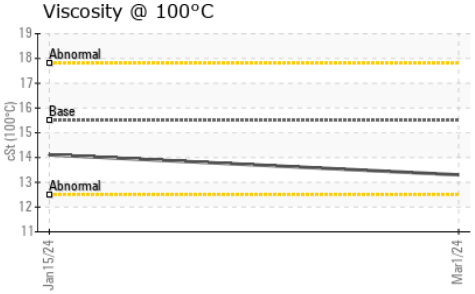
Non-ferrous Metals



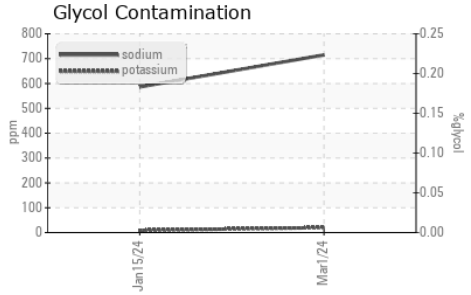
Base Number



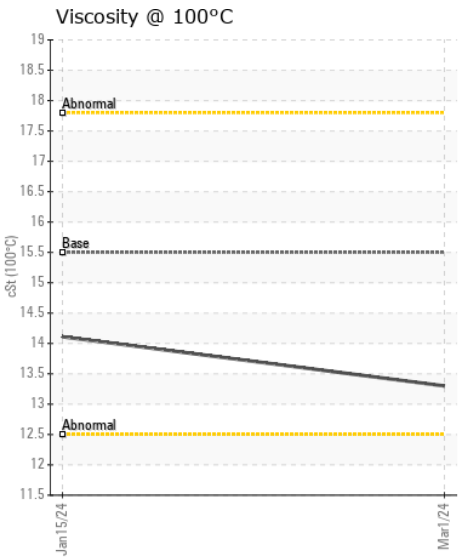
Viscosity @ 100°C



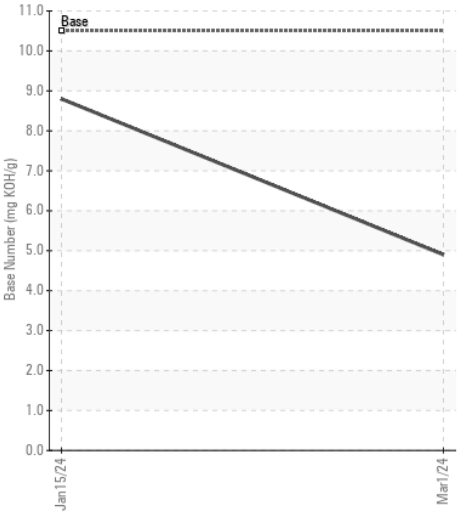
Glycol Contamination



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0057724
Lab Number : 06122970
Unique Number : 10937121
Test Package : MAR 2 (Additional Tests: Glycol)

Received : 19 Mar 2024
Tested : 22 Mar 2024
Diagnosed : 22 Mar 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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