MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
SUL
Component
Starboard Main Engine
Fluid
CHEVRON RPM HEAVY DUTY SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

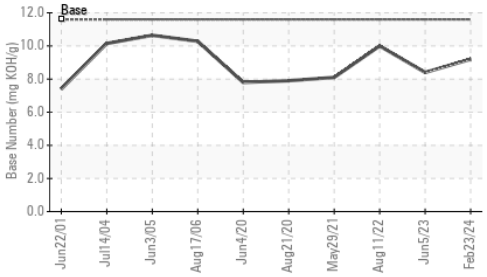
Sodium and/or potassium levels are high.

FLUID CONDITION

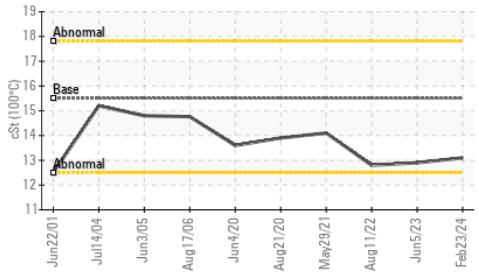
The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0060667	MW0031823	MW0042695
Sample Date		Client Info		23 Feb 2024	05 Jun 2023	11 Aug 2022
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
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	ABNORMAL
Iron	ppm	ASTM D5185m	>75	12	21	17
Chromium	ppm	ASTM D5185m	>8	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	<1	2
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	4	<1	3
Lead	ppm	ASTM D5185m	>18	13	▲ 46	18
Copper	ppm	ASTM D5185m	>80	2	4	4
Tin	ppm	ASTM D5185m	>14	<1	1	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	8	7	7
Potassium	ppm	ASTM D5185m	>20	▲ 56	▲ 54	▲ 68
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.6	0.8	0.7
Nitration	Abs/cm	*ASTM D7624	>20	8.6	10.8	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.0	24.5	25.6
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	▲ 396	▲ 387	▲ 362
Boron	ppm	ASTM D5185m	0	289	129	175
Barium	ppm	ASTM D5185m	0	0	0	<1
Molybdenum	ppm	ASTM D5185m		142	121	110
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		728	651	632
Calcium	ppm	ASTM D5185m		1573	1560	1440
Phosphorus	ppm	ASTM D5185m	1370	765	651	667
Zinc	ppm	ASTM D5185m	1480	889	838	816
Sulfur	ppm	ASTM D5185m		2596	2954	2422
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.7	20.0	20.1
Base Number (BN)	mg KOH/g	ASTM D2896	11.6	9.2	8.4	10.0
Visc @ 100°C	cSt	ASTM D445	15.5	13.1	12.9	12.8

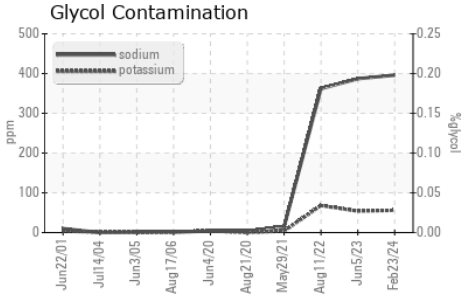
Base Number



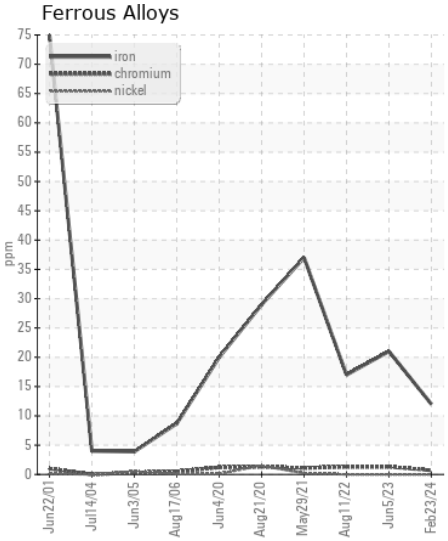
Viscosity @ 100°C



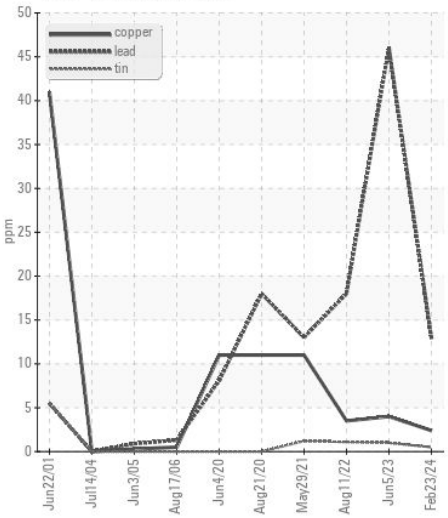
Glycol Contamination



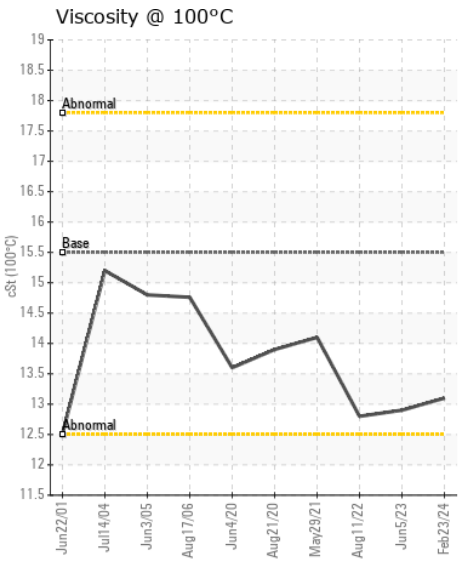
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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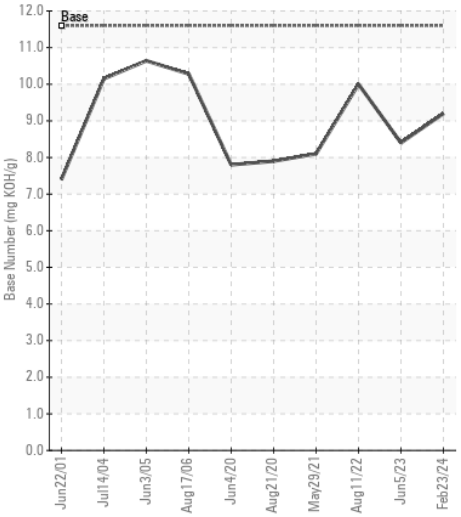

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0060667
Lab Number : 06103559
Unique Number : 10901789
Test Package : MAR 2 (Additional Tests: Glycol)

Received : 28 Feb 2024
Tested : 04 Mar 2024
Diagnosed : 04 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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