MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
STEPHEN P VENABLE
Machine Id
[STEPHEN P VENABLE] 003 590046-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

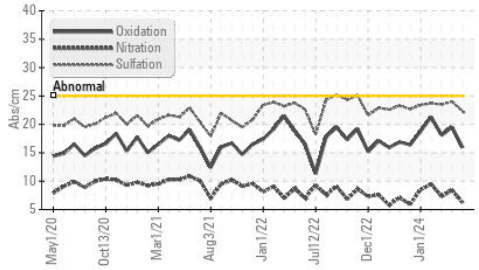
There is no indication of any contamination in the oil.

FLUID CONDITION

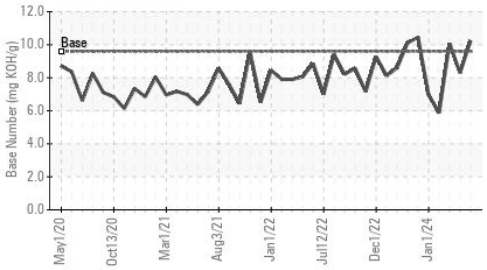
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067994	MW0067973	MW0062967
Sample Date		Client Info		22 May 2024	03 Apr 2024	01 Mar 2024
Machine Age	hrs	Client Info		6669	5991	5200
Oil Age	hrs	Client Info		332	5991	479
Filter Age	hrs	Client Info		332	5991	479
Oil Changed		Client Info		Not Changd	Not Changd	N/A
Filter Changed		Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	3	2	3
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	0	0
Silver	ppm	ASTM D5185m	>2	1	0	0
Aluminum	ppm	ASTM D5185m	>15	4	3	2
Lead	ppm	ASTM D5185m	>18	<1	<1	<1
Copper	ppm	ASTM D5185m	>80	10	17	30
Tin	ppm	ASTM D5185m	>14	<1	<1	0
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	>20	5	5	4
Potassium	ppm	ASTM D5185m	>20	2	0	0
Fuel		WC Method	>4.0	<1.0	<1.0	1.9
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	6.2	8.4	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	24.0	23.5
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	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	2	2	<1
Boron	ppm	ASTM D5185m		369	315	325
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		111	125	119
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		541	668	656
Calcium	ppm	ASTM D5185m		1363	1487	1633
Phosphorus	ppm	ASTM D5185m	1200	670	690	734
Zinc	ppm	ASTM D5185m	1300	789	809	831
Sulfur	ppm	ASTM D5185m	3200	2579	2299	3040
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	19.5	18.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	10.24	8.30	10.07
Visc @ 100°C	cSt	ASTM D445	15.7	13.72	13.3	13.1

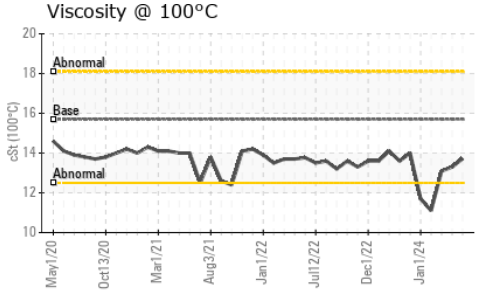
FT-IR (Direct Trend)



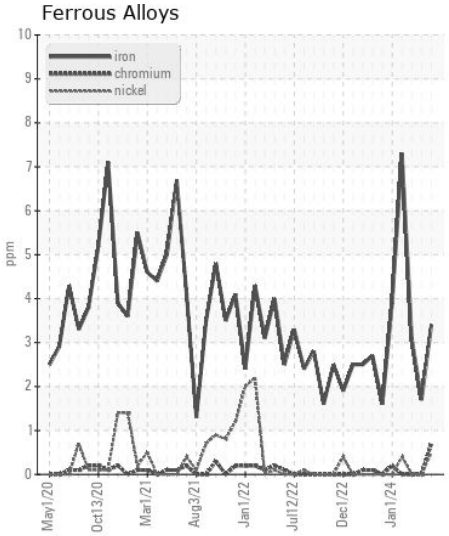
Base Number



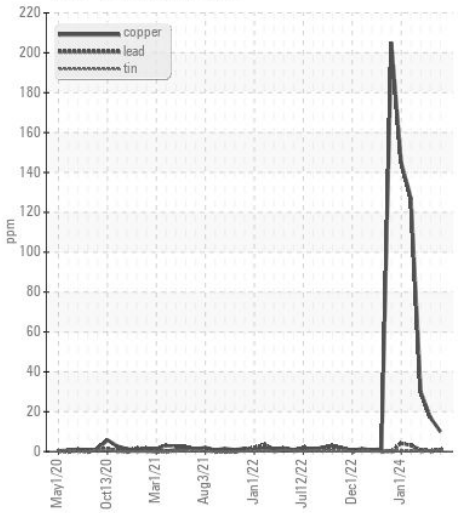
Viscosity @ 100°C



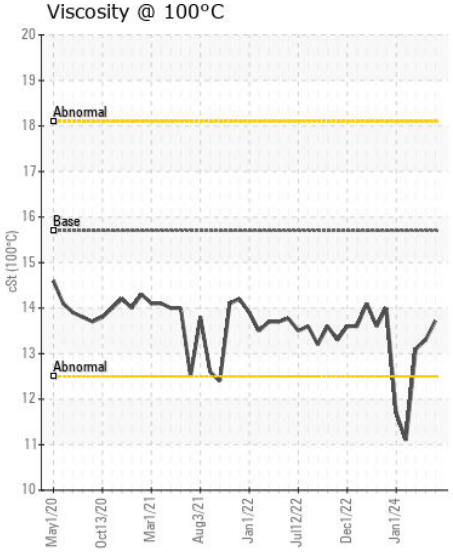
Ferrous Alloys



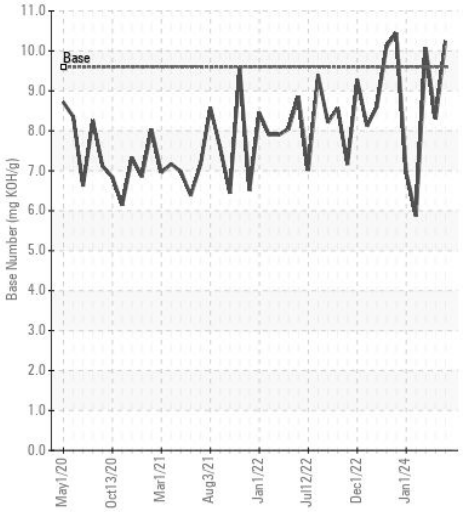
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067994
Lab Number : 06193051
Unique Number : 11049803
Test Package : MAR 2

Received : 28 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Sean Felton

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)

INGRAM BARGE
900 S 3RD ST
PADUCAH, KY
US 42003
Contact: JOHNNY HINES
johnny.hines@ingrambarge.com
T: (270)415-4467
F: (615)695-3697