



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CHA
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW06028305	MW06017183	MW06017167
Sample Date		Client Info		06 Dec 2023	23 Nov 2023	23 Nov 2023
Machine Age	hrs	Client Info		55260	54438	53763
Oil Age	hrs	Client Info		3036	2205	725
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				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	6	6	2
Chromium	ppm	ASTM D5185m	>8	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	2
Lead	ppm	ASTM D5185m	>18	0	0	<1
Copper	ppm	ASTM D5185m	>80	<1	<1	0
Tin	ppm	ASTM D5185m	>14	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

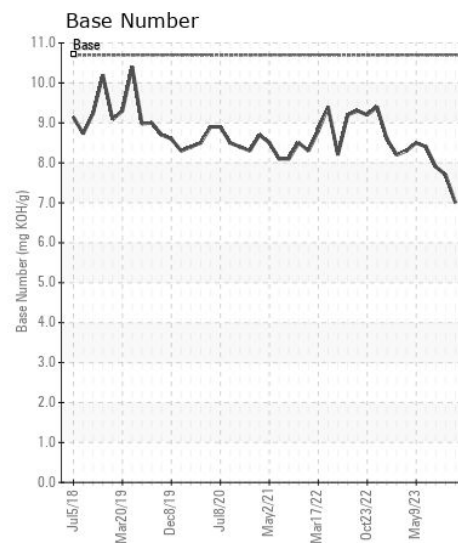
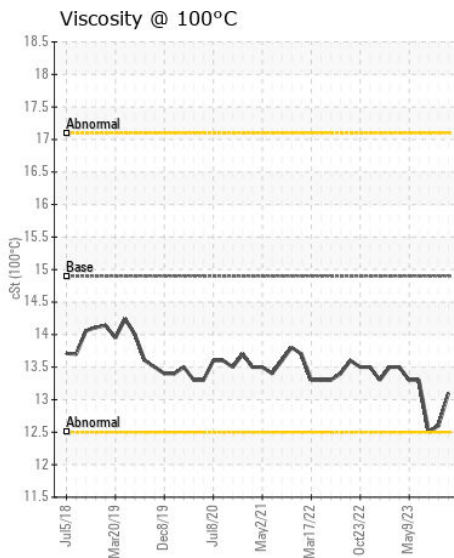
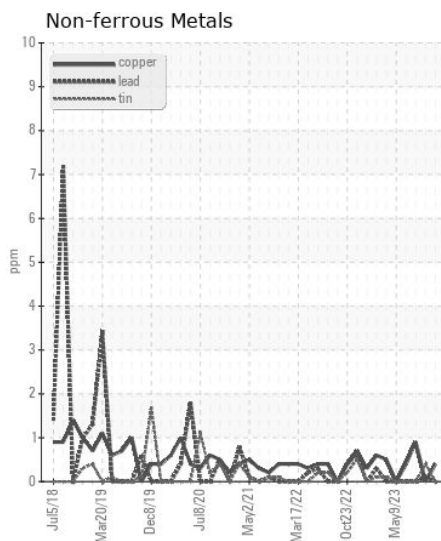
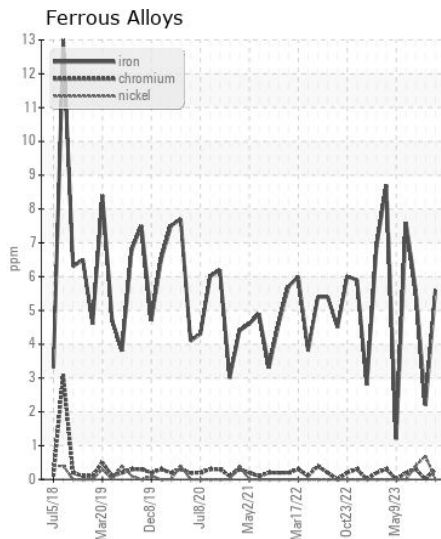
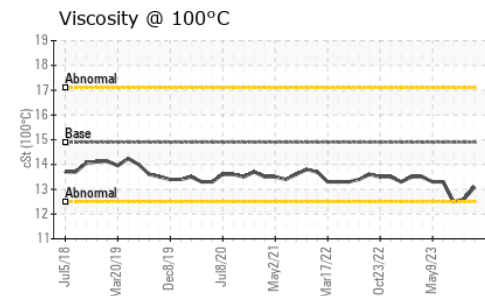
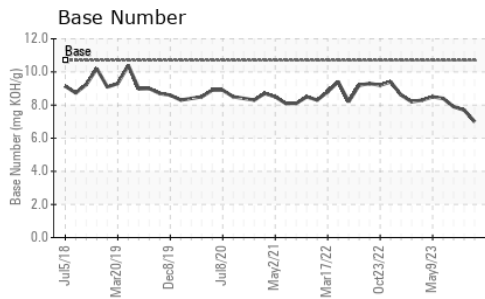
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	6	5
Potassium	ppm	ASTM D5185m	>20	2	2	2
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		0.6	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	6.0	6.6	6.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.1	21.1	20.3
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

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.

Sodium	ppm	ASTM D5185m	>75	<1	<1	1
Boron	ppm	ASTM D5185m		308	247	225
Barium	ppm	ASTM D5185m		6	0	0
Molybdenum	ppm	ASTM D5185m		98	80	70
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		468	396	388
Calcium	ppm	ASTM D5185m		1641	1573	1612
Phosphorus	ppm	ASTM D5185m	760	811	727	882
Zinc	ppm	ASTM D5185m	830	948	958	970
Sulfur	ppm	ASTM D5185m	2770	3014	3313	2973
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.3	14.3	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	7.0	7.7	7.9
Visc @ 100°C	cSt	ASTM D445	14.9	13.1	12.6	12.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW06028305
Lab Number : 06028305
Unique Number : 10778096
Test Package : MAR 2

Received : 07 Dec 2023
Tested : 09 Dec 2023
Diagnosed : 10 Dec 2023 - Don Baldrige

ILLINOIS MARINE TOWING
 PO BOX 391
 LEMONT, IL
 US 60439
 Contact: RHETT DANIEL
 rdaniel@imtowing.com
 T: (630)280-4926
 F: (630)739-2041

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)