



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CAIRO (S/N TSJ00164)
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (201 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0062583	MW0062434	MW0062464
Sample Date		Client Info		11 Apr 2024	26 Mar 2024	04 Mar 2024
Machine Age	hrs	Client Info		86163	85806	85280
Oil Age	hrs	Client Info		1177	811	294
Filter Age	hrs	Client Info		380	14	294
Oil Changed		Client Info		Not Chngd	N/A	Changed
Filter Changed		Client Info		Not Chngd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	5	6	3
Chromium	ppm	ASTM D5185m	>8	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	14	15	15
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	0	2	1
Lead	ppm	ASTM D5185m	>18	0	0	0
Copper	ppm	ASTM D5185m	>80	0	<1	<1
Tin	ppm	ASTM D5185m	>14	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

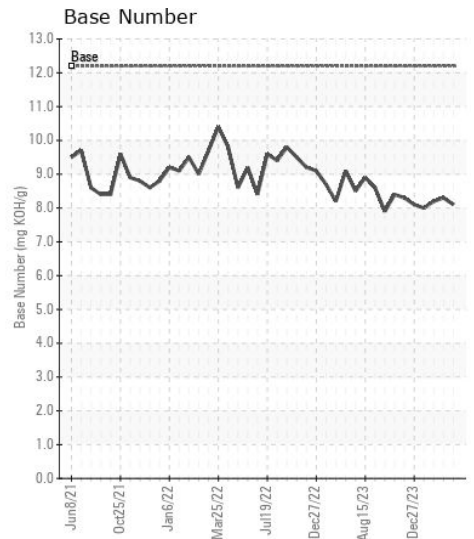
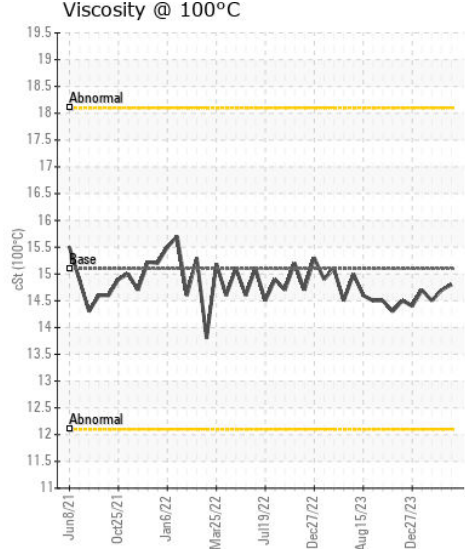
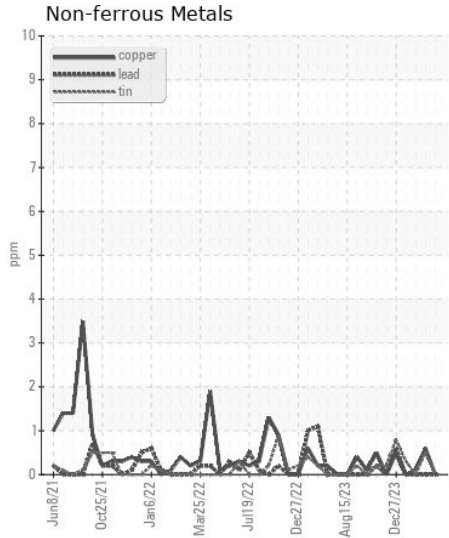
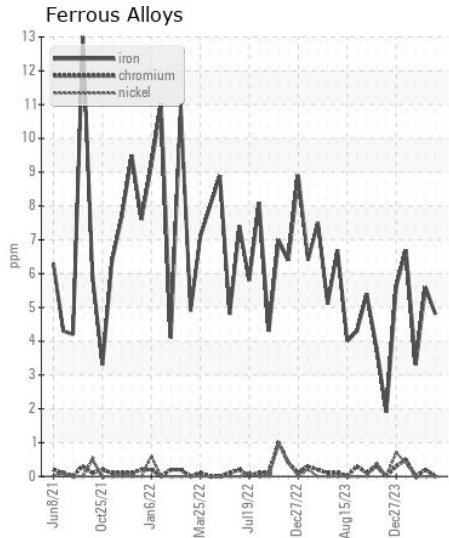
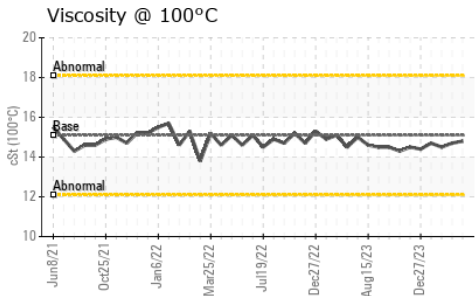
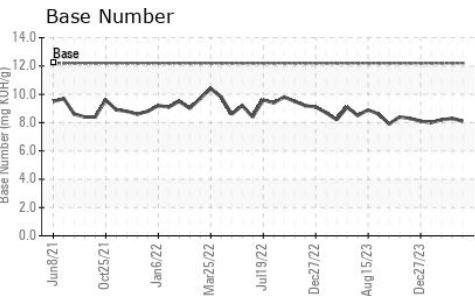
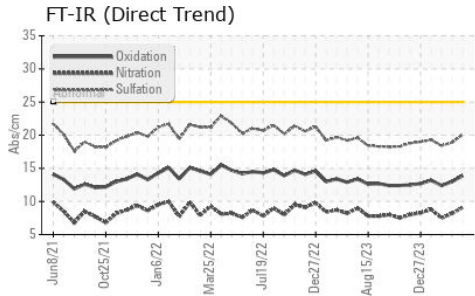
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	2	4	2
Potassium	ppm	ASTM D5185m	>20	2	4	1
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		1	0.7	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.1	8.2	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	18.9	18.4
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

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	2	2
Boron	ppm	ASTM D5185m		81	105	103
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		31	29	29
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		792	668	734
Calcium	ppm	ASTM D5185m		1842	1499	1591
Phosphorus	ppm	ASTM D5185m	1360	819	663	700
Zinc	ppm	ASTM D5185m	1480	967	771	799
Sulfur	ppm	ASTM D5185m		3935	3102	3113
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	13.0	12.4
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	8.1	8.3	8.2
Visc @ 100°C	cSt	ASTM D445	15.1	14.8	14.7	14.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062583
Lab Number : 06158719
Unique Number : 10994142
Test Package : MAR 2

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Angela Borella

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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)