



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MV ANNA C
Component
Starboard Main Engine
Fluid
DIESEL ENGINE OIL 10W40 (10 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0062729	MW0036668	MW0036675
Sample Date		Client Info		24 May 2024	10 May 2023	21 Jun 2022
Machine Age	hrs	Client Info		4408	2556	1800
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

The lead level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	12	11	14
Chromium	ppm	ASTM D5185m	>8	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	4	<1	3
Lead	ppm	ASTM D5185m	>18	▲ 46	20	▲ 37
Copper	ppm	ASTM D5185m	>80	2	2	2
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

CONTAMINATION

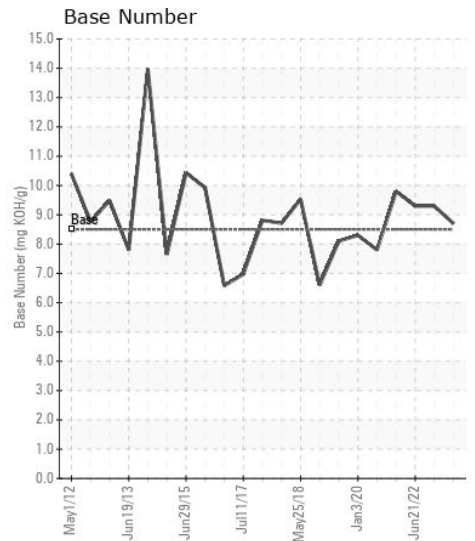
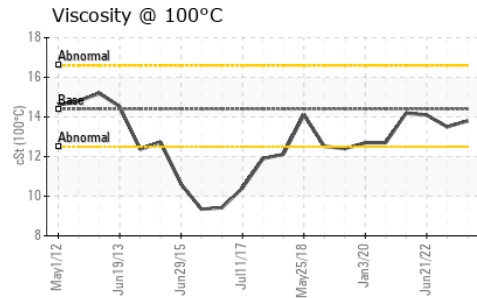
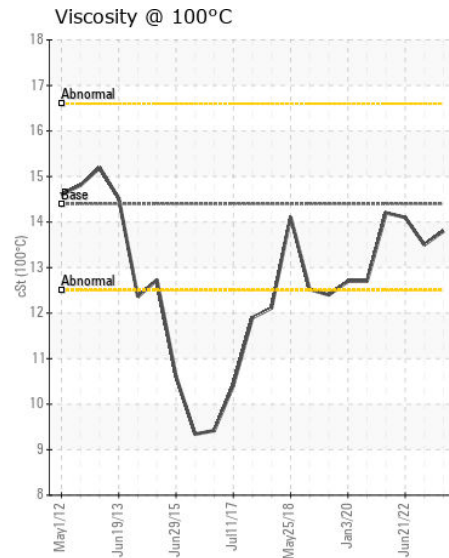
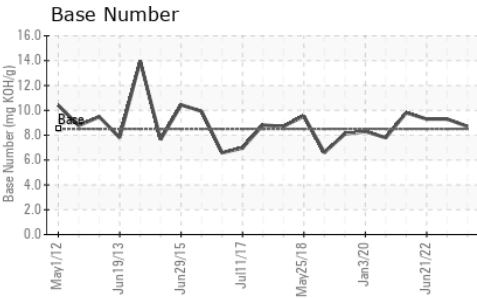
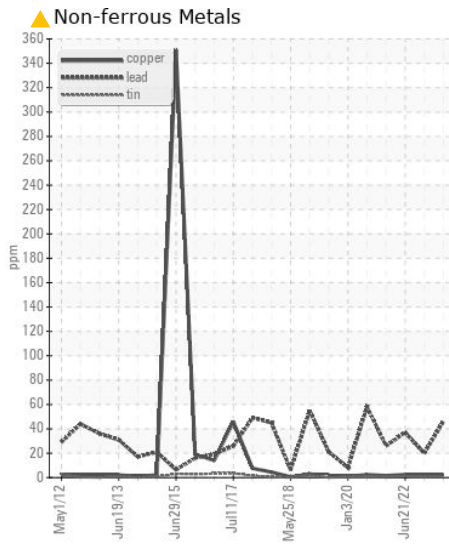
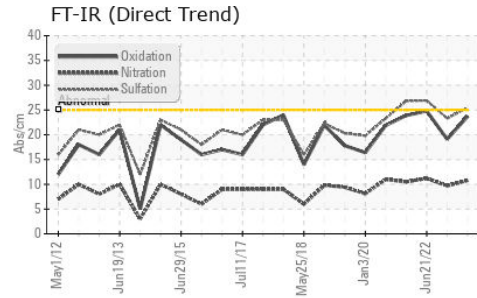
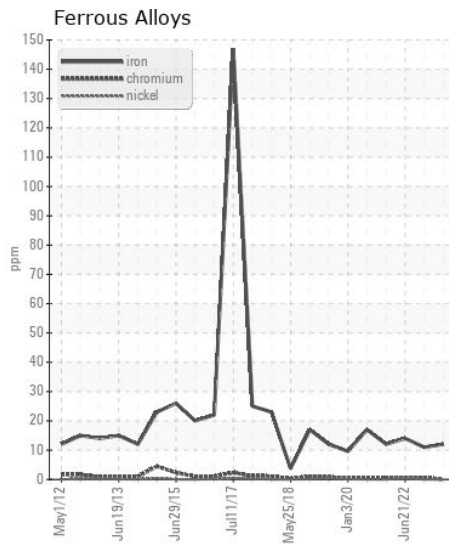
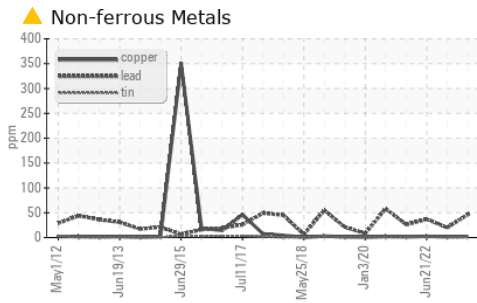
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	5	4	5
Potassium	ppm	ASTM D5185m	>20	0	1	0
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		0.3	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	10.8	9.7	11.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.5	23.3	26.9
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	2	1	2
Boron	ppm	ASTM D5185m	250	248	197	284
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	122	77	129
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	698	388	670
Calcium	ppm	ASTM D5185m	3000	1615	2273	1621
Phosphorus	ppm	ASTM D5185m	1150	775	883	733
Zinc	ppm	ASTM D5185m	1350	954	1098	987
Sulfur	ppm	ASTM D5185m	4250	2758	3022	2974
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.7	19.1	24.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.7	9.3	9.3
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.5	14.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062729
Lab Number : 06196488
Unique Number : 11058611
Test Package : MAR 2

Received : 31 May 2024
Tested : 03 Jun 2024
Diagnosed : 03 Jun 2024 - Don Baldrige

C & B MARINE
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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)