



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**FLETCHER ARMSTRONG**  
Component  
**Starboard Genset**  
Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (4 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0060589</b>	MW0060600	MW0060592
Sample Date		Client Info		<b>04 Apr 2024</b>	04 Mar 2024	28 Nov 2023
Machine Age	hrs	Client Info		<b>36669</b>	36520	35609
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>4</b>	7	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>4</b>	4	3
Lead	ppm	ASTM D5185m	>17	<b>&lt;1</b>	2	2
Copper	ppm	ASTM D5185m	>70	<b>&lt;1</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

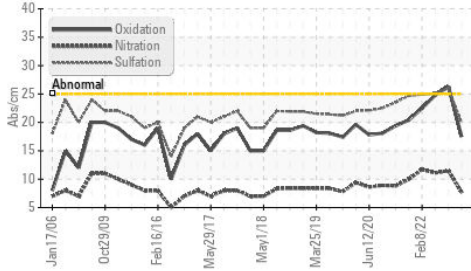
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.4</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.7</b>	11.5	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.0</b>	26.0	25.1
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

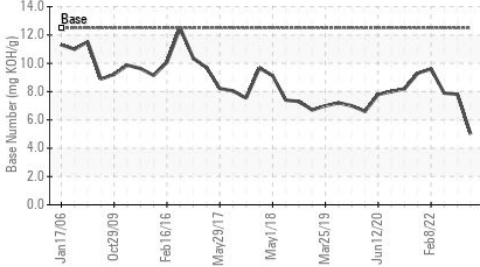
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	1	1
Boron	ppm	ASTM D5185m	151	<b>372</b>	220	248
Barium	ppm	ASTM D5185m	0.4	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	250	<b>123</b>	127	121
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	0	<b>632</b>	725	694
Calcium	ppm	ASTM D5185m	2046	<b>1495</b>	1663	1625
Phosphorus	ppm	ASTM D5185m	1043	<b>622</b>	668	628
Zinc	ppm	ASTM D5185m	943	<b>781</b>	852	835
Sulfur	ppm	ASTM D5185m	5012	<b>3163</b>	2884	2458
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.5</b>	26.3	24.8
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	<b>5.0</b>	7.8	7.9
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.3</b>	14.5	14.3

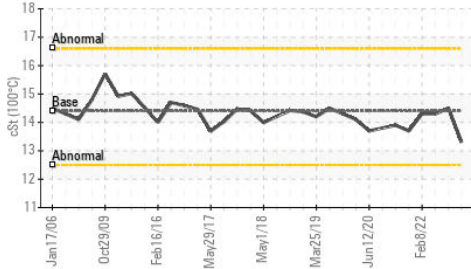
**FT-IR (Direct Trend)**



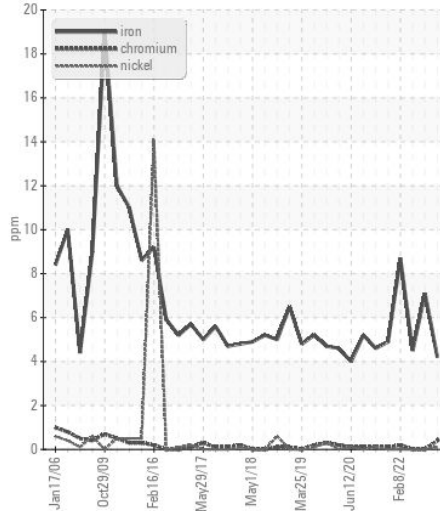
**Base Number**



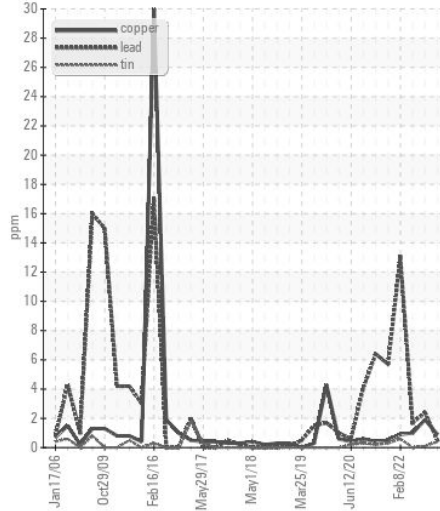
**Viscosity @ 100°C**



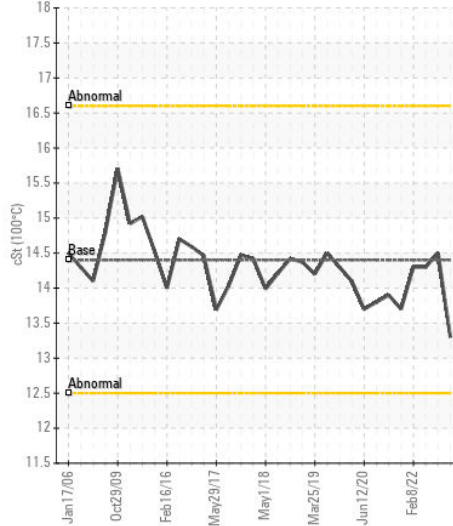
**Ferrous Alloys**



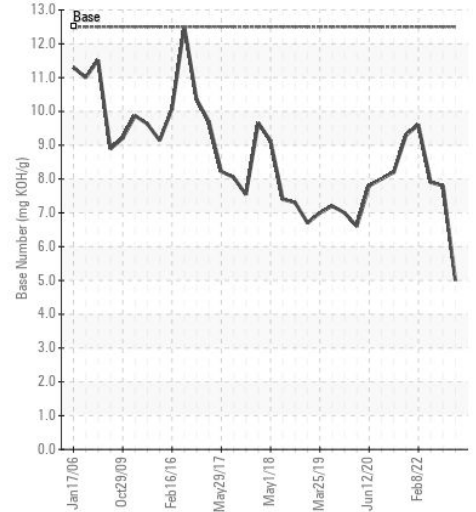
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : MW0060589

**Lab Number** : 06188711

**Unique Number** : 11045463

**Test Package** : MAR 2

**Received** : 23 May 2024

**Tested** : 24 May 2024

**Diagnosed** : 24 May 2024 - Wes Davis

**ERGON MARINE**

100 LEE STREET

VICKSBURG, MS

US 39180

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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)