



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

Machine Id  
**MILES MADISON**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (150 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0057780</b>	MW0057872	MW0057889
Sample Date		Client Info		<b>05 Apr 2024</b>	13 Mar 2024	25 Nov 2023
Machine Age	hrs	Client Info		<b>924</b>	460	63972
Oil Age	hrs	Client Info		<b>924</b>	460	492
Filter Age	hrs	Client Info		<b>298</b>	460	492
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>7</b>	7	3
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	1	0
Nickel	ppm	ASTM D5185m	>2	<b>2</b>	2	0
Titanium	ppm	ASTM D5185m	>3	<b>17</b>	17	14
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>18	<b>2</b>	2	<1
Copper	ppm	ASTM D5185m	>80	<b>3</b>	3	2
Tin	ppm	ASTM D5185m	>14	<b>2</b>	2	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
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.

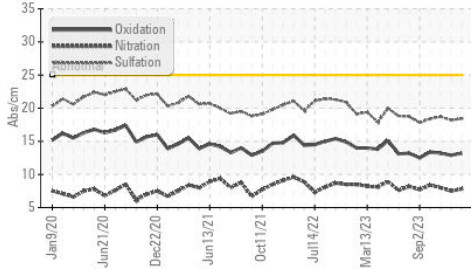
Silicon	ppm	ASTM D5185m	>20	<b>13</b>	16	3
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	4	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.8</b>	7.5	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.4</b>	18.2	18.7
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**

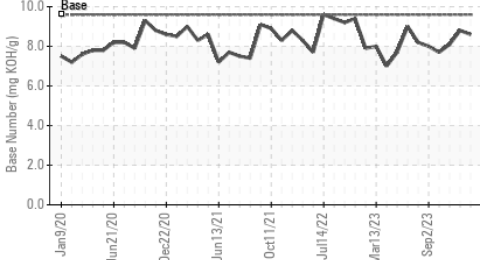
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>4</b>	3	1
Boron	ppm	ASTM D5185m		<b>112</b>	113	85
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>32</b>	32	32
Manganese	ppm	ASTM D5185m		<b>2</b>	2	0
Magnesium	ppm	ASTM D5185m		<b>721</b>	702	773
Calcium	ppm	ASTM D5185m		<b>1562</b>	1532	1587
Phosphorus	ppm	ASTM D5185m	1200	<b>811</b>	754	731
Zinc	ppm	ASTM D5185m	1300	<b>857</b>	820	852
Sulfur	ppm	ASTM D5185m	3200	<b>3745</b>	3487	3214
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.2</b>	12.9	13.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>8.6</b>	8.8	8.1
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.9</b>	13.8	13.9

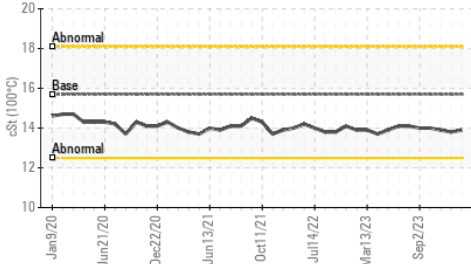
**FT-IR (Direct Trend)**



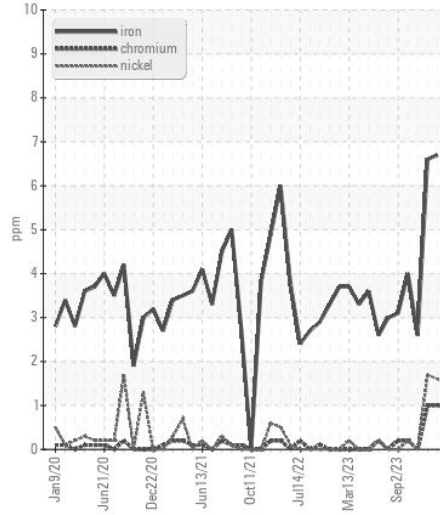
**Base Number**



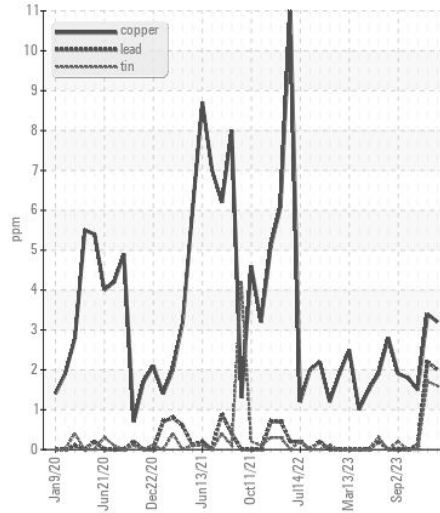
**Viscosity @ 100°C**



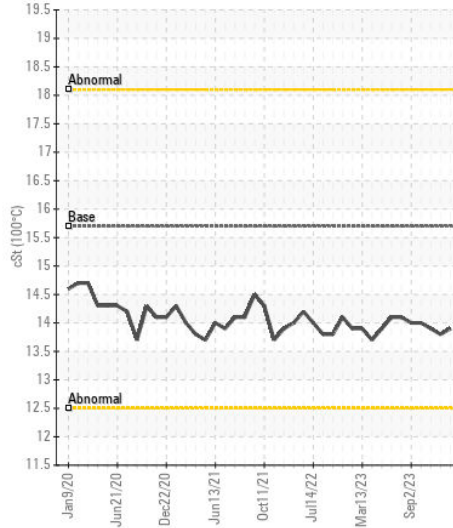
**Ferrous Alloys**



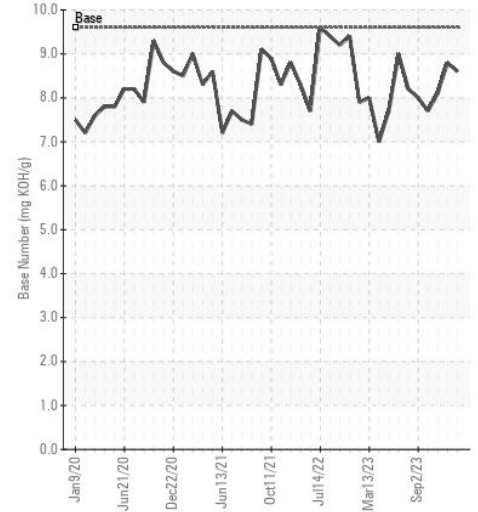
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0057780  
**Lab Number** : 06152573  
**Unique Number** : 10982651  
**Test Package** : MAR 2

**Received** : 17 Apr 2024  
**Tested** : 18 Apr 2024  
**Diagnosed** : 22 Apr 2024 - Don Baldrige

**MAGNOLIA MARINE TRANSPORT**  
 697 HAINING ROAD  
 VICKSBURG, MS  
 US 39183  
 Contact: MMT MAINTENANCE PLANNERS  
 mmtmaintenanceplanners@ergon.com

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)

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