



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
TENNESSEE MERCHANT (S/N 29700815)
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (209 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0044877	MWM731252	MW0044708
Sample Date		Client Info		14 May 2024	02 Dec 2023	17 Nov 2023
Machine Age	hrs	Client Info		6739	5867	5515
Oil Age	hrs	Client Info		797	1455	1103
Filter Age	hrs	Client Info		797	0	281
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Filter Changed		Client Info		N/A	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	4	7	1
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	13	0	12
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	2
Lead	ppm	ASTM D5185m	>18	<1	0	0
Copper	ppm	ASTM D5185m	>80	2	<1	1
Tin	ppm	ASTM D5185m	>14	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<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.

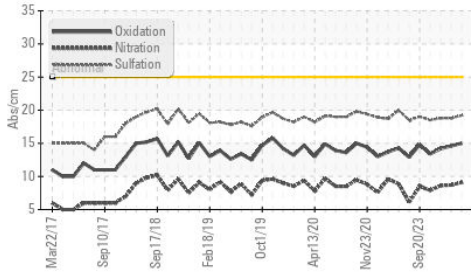
Silicon	ppm	ASTM D5185m	>20	5	6	7
Potassium	ppm	ASTM D5185m	>20	4	<1	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.1	8.7	8.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	18.8	18.8
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

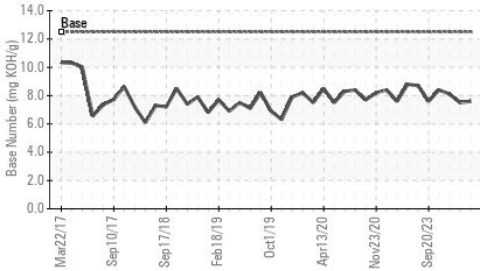
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	3	27	2
Boron	ppm	ASTM D5185m	151	106	1	121
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	32	57	37
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	0	690	921	761
Calcium	ppm	ASTM D5185m	2046	1438	1080	1488
Phosphorus	ppm	ASTM D5185m	1043	802	1022	711
Zinc	ppm	ASTM D5185m	943	815	1230	851
Sulfur	ppm	ASTM D5185m	5012	3397	3006	3050
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	14.6	14.2
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.6	7.5	8.1
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	13.9	13.9

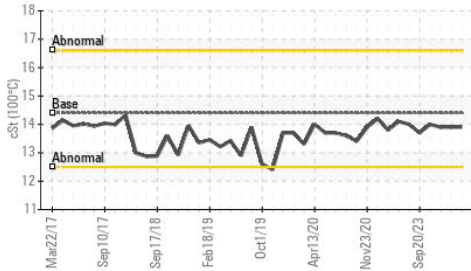
FT-IR (Direct Trend)



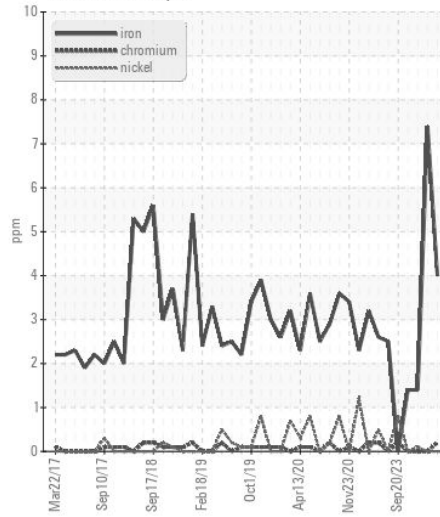
Base Number



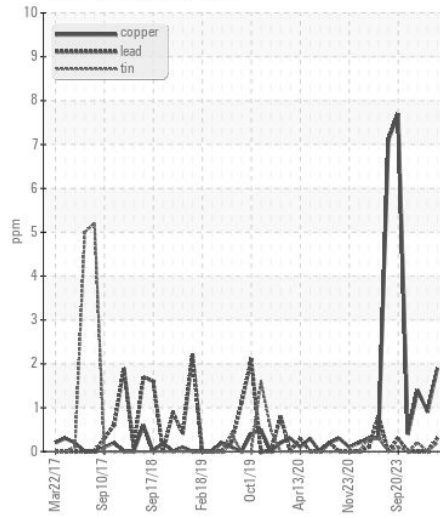
Viscosity @ 100°C



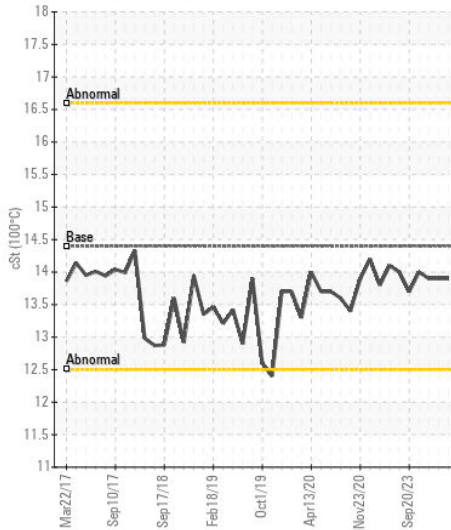
Ferrous Alloys



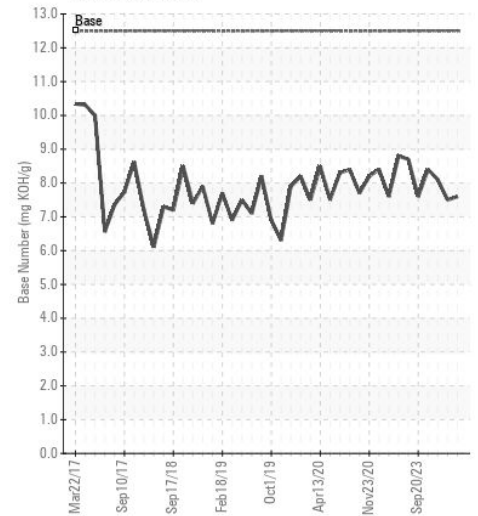
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0044877
Lab Number : 06185886
Unique Number : 11042638
Test Package : MAR 2

Received : 21 May 2024
Tested : 22 May 2024
Diagnosed : 23 May 2024 - Jonathan Hester

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 JEFFERSONVILLE, IN
 US 47130
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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)

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