



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

MARK C

Machine Id

[MARK C] 003 543154-3

Component

Starboard Main Engine

Fluid

CHEVRON DELO 400 LE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067910	MW0065913	MW0067834
Sample Date		Client Info		01 May 2024	03 Apr 2024	04 Mar 2024
Machine Age	hrs	Client Info		22132	21439	20723
Oil Age	hrs	Client Info		609	658	660
Filter Age	hrs	Client Info		609	658	660
Oil Changed		Client Info		Not Chngd	N/A	N/A
Filter Changed		Client Info		Not Chngd	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	4	3	1
Chromium	ppm	ASTM D5185m	>8	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	1	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	1	0	0
Aluminum	ppm	ASTM D5185m	>15	5	3	3
Lead	ppm	ASTM D5185m	>18	<1	1	0
Copper	ppm	ASTM D5185m	>80	4	3	1
Tin	ppm	ASTM D5185m	>14	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	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.

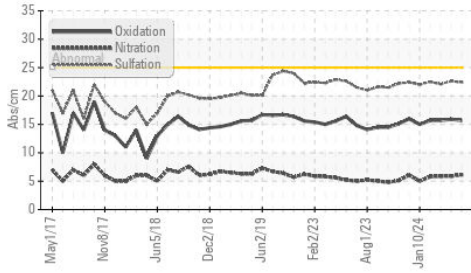
Silicon	ppm	ASTM D5185m	>20	7	6	4
Potassium	ppm	ASTM D5185m	>20	2	2	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.1	5.9	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	22.6	22.1
Silt	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

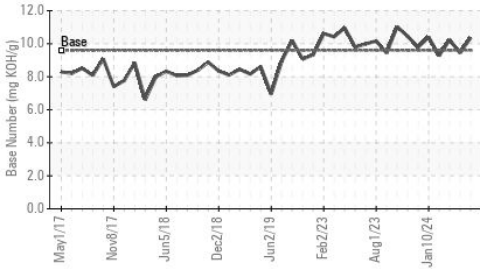
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	3	<1	<1
Boron	ppm	ASTM D5185m		465	402	334
Barium	ppm	ASTM D5185m		<1	<1	0
Molybdenum	ppm	ASTM D5185m		145	128	114
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		705	592	599
Calcium	ppm	ASTM D5185m		1827	1594	1544
Phosphorus	ppm	ASTM D5185m	1200	835	688	639
Zinc	ppm	ASTM D5185m	1300	1017	745	744
Sulfur	ppm	ASTM D5185m	3200	3324	2512	2721
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	15.9	15.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	10.36	9.44	10.23
Visc @ 100°C	cSt	ASTM D445	15.7	13.47	13.3	13.4

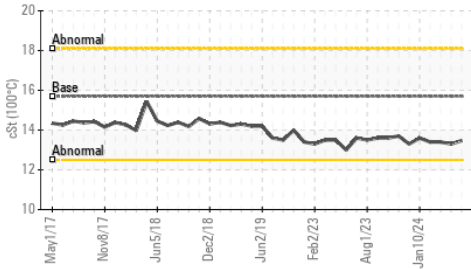
FT-IR (Direct Trend)



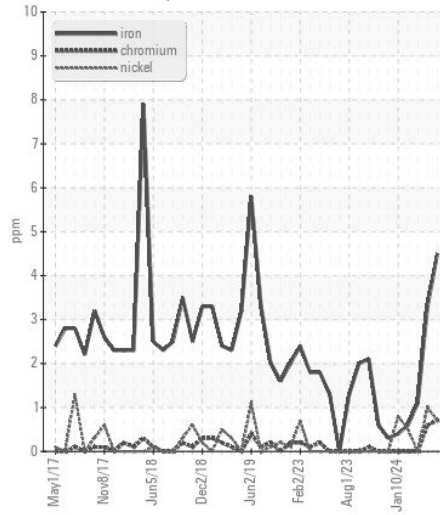
Base Number



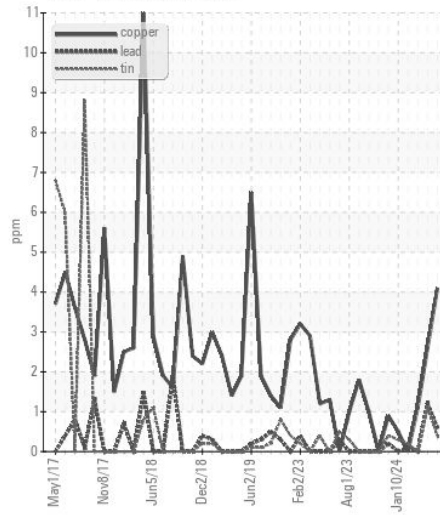
Viscosity @ 100°C



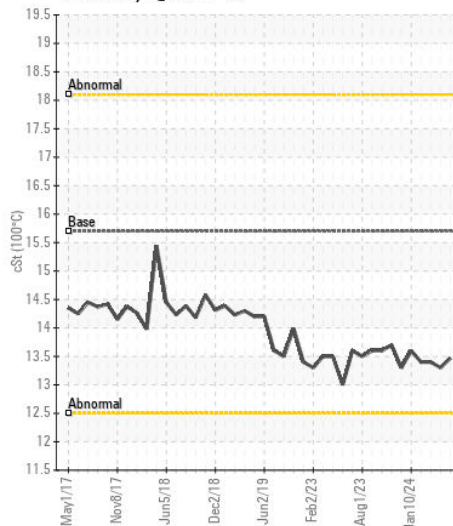
Ferrous Alloys



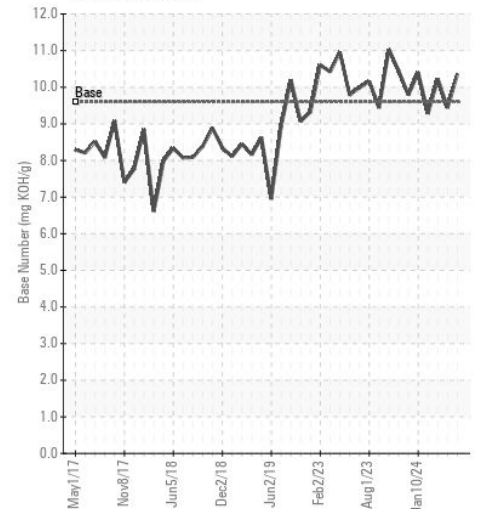
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067910
Lab Number : 06193049
Unique Number : 11049801
Test Package : MAR 2
Received : 28 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Sean Felton

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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)