



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

A J MORRIS

Machine Id

[A J MORRIS] 003 550220-3

Component

Starboard Main Engine

Fluid

CHEVRON DELO 400 LE 15W40 (16 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0062841	MW0064575	MW0064577
Sample Date		Client Info		11 Apr 2024	01 Mar 2024	01 Jan 2024
Machine Age	hrs	Client Info		40965	40809	41549
Oil Age	hrs	Client Info		850	192	480
Filter Age	hrs	Client Info		850	192	480
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	7	4	3
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	2	4
Lead	ppm	ASTM D5185m	>18	6	6	3
Copper	ppm	ASTM D5185m	>80	5	3	3
Tin	ppm	ASTM D5185m	>14	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	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.

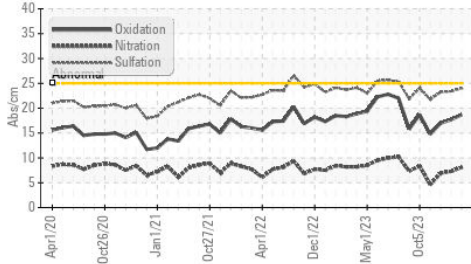
Silicon	ppm	ASTM D5185m	>20	7	6	6
Potassium	ppm	ASTM D5185m	>20	2	0	<1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.1	7.3	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.0	23.4	23.2
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

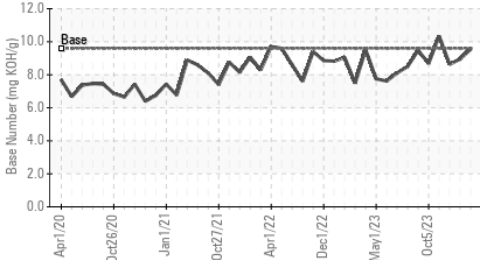
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	0	<1	0
Boron	ppm	ASTM D5185m		382	318	356
Barium	ppm	ASTM D5185m		2	0	0
Molybdenum	ppm	ASTM D5185m		128	124	130
Manganese	ppm	ASTM D5185m		2	<1	<1
Magnesium	ppm	ASTM D5185m		623	676	685
Calcium	ppm	ASTM D5185m		1576	1693	1621
Phosphorus	ppm	ASTM D5185m	1200	700	687	751
Zinc	ppm	ASTM D5185m	1300	815	840	835
Sulfur	ppm	ASTM D5185m	3200	2889	2608	2657
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.7	17.7	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	9.55	8.95	8.63
Visc @ 100°C	cSt	ASTM D445	15.7	13.2	13.2	13.1

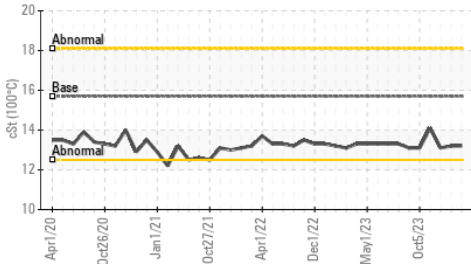
FT-IR (Direct Trend)



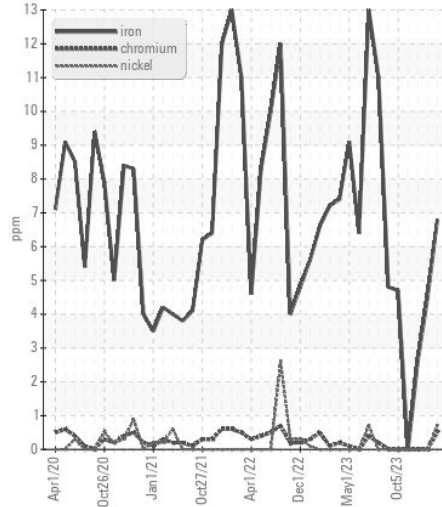
Base Number



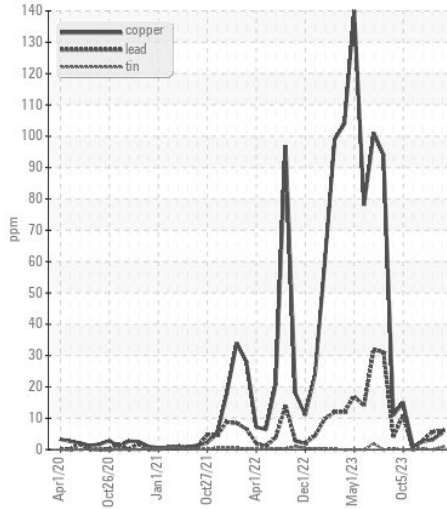
Viscosity @ 100°C



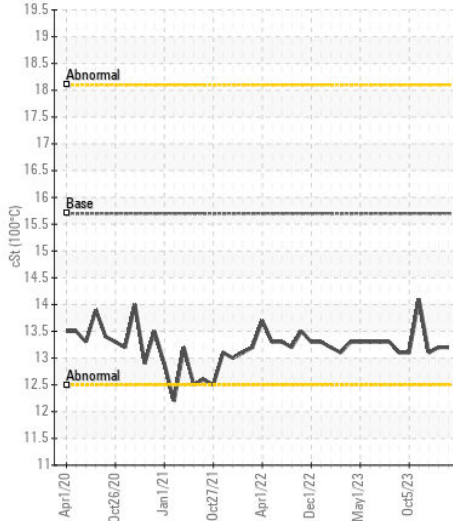
Ferrous Alloys



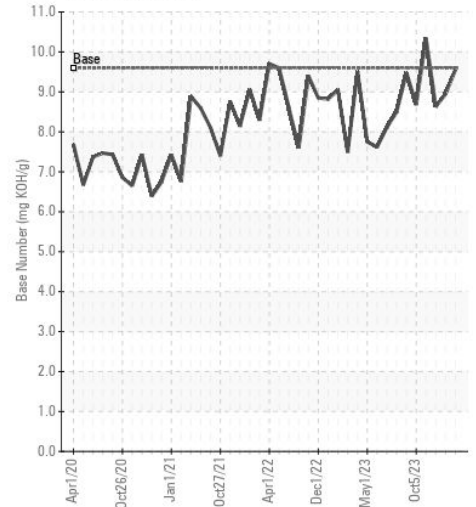
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : MW0062841

Lab Number : 06153831

Unique Number : 10989254

Test Package : MAR 2

Received : 18 Apr 2024

Tested : 22 Apr 2024

Diagnosed : 22 Apr 2024 - Wes Davis

INGRAM BARGE

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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)