



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SIGNET VOLUNTEER

Component
Starboard Genset

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0064105	MW0064146	MW0064057
Sample Date		Client Info		11 Apr 2024	01 Jan 2024	28 Dec 2023
Machine Age	hrs	Client Info		9211	9199	9042
Oil Age	hrs	Client Info		2462	9199	9042
Filter Age	hrs	Client Info		2462	0	9042
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	5	5	3
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>5	<1	0	0
Aluminum	ppm	ASTM D5185m	>12	2	2	2
Lead	ppm	ASTM D5185m	>17	1	0	0
Copper	ppm	ASTM D5185m	>70	1	1	0
Tin	ppm	ASTM D5185m	>15	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.

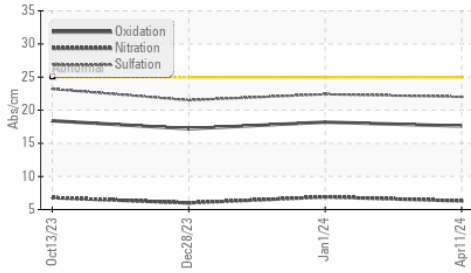
Silicon	ppm	ASTM D5185m	>25	5	4	4
Potassium	ppm	ASTM D5185m	>20	5	4	3
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.3	6.9	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	22.4	21.5
Silt	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

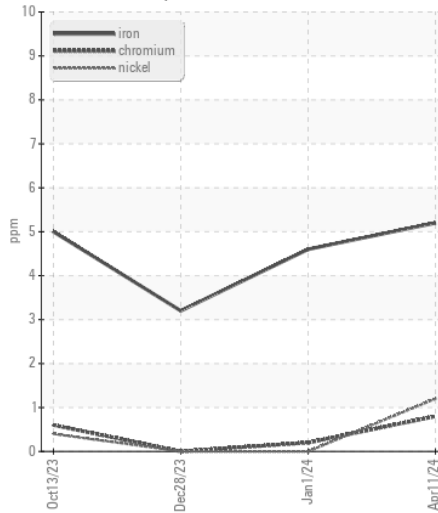
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	<1	<1
Boron	ppm	ASTM D5185m		287	221	244
Barium	ppm	ASTM D5185m		0	10	0
Molybdenum	ppm	ASTM D5185m		67	75	67
Manganese	ppm	ASTM D5185m		1	0	<1
Magnesium	ppm	ASTM D5185m		354	412	395
Calcium	ppm	ASTM D5185m		1827	1684	2034
Phosphorus	ppm	ASTM D5185m	1360	920	842	954
Zinc	ppm	ASTM D5185m	1480	1002	957	1069
Sulfur	ppm	ASTM D5185m		3426	3182	3351
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	18.2	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	8.8	8.5	8.7
Visc @ 100°C	cSt	ASTM D445	15.1	13.2	12.8	13.2

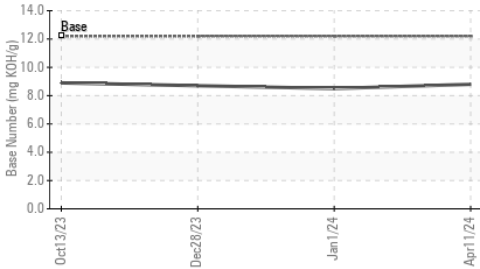
FT-IR (Direct Trend)



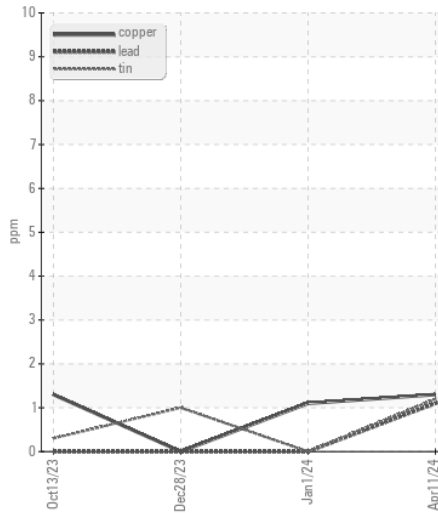
Ferrous Alloys



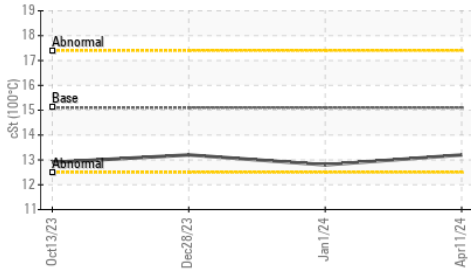
Base Number



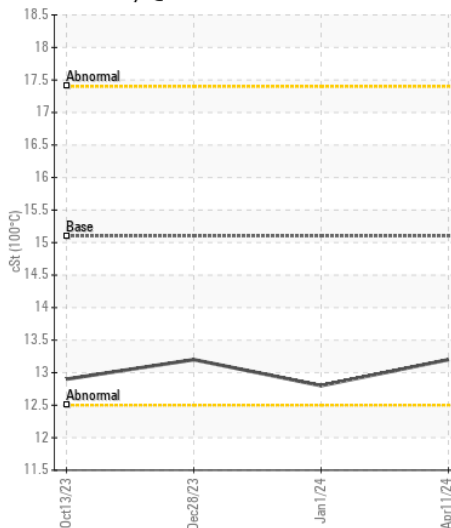
Non-ferrous Metals



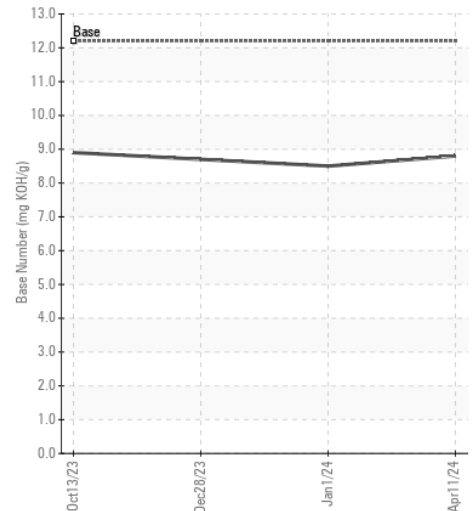
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : MW0064105

Lab Number : 06152755

Unique Number : 10982833

Test Package : MAR 2

Received : 18 Apr 2024

Tested : 18 Apr 2024

Diagnosed : 22 Apr 2024 - Don Baldrige

MARITIME COMPANY

3802 PORT RIVER RD

PASCAGOULA, MS

US 39567

Contact: MARK KOPSYWA

mark.kopszywa@signetmaritime.com

T:

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)

F: (228)769-0629