



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LOUISIANA HERITAGE

Component
Starboard Genset

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (4 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0042774	MW0042766	MW0052285
Sample Date		Client Info		03 Jan 2024	17 Oct 2023	24 May 2023
Machine Age	hrs	Client Info		50386	49408	47723
Oil Age	hrs	Client Info		1787	892	875
Filter Age	hrs	Client Info		1787	892	875
Oil Changed		Client Info		Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>50	▲ 57	24	▲ 32
Chromium	ppm	ASTM D5185m	>4	▲ 7	2	2
Nickel	ppm	ASTM D5185m	>2	2	<1	<1
Titanium	ppm	ASTM D5185m		16	13	14
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	13	5	4
Lead	ppm	ASTM D5185m	>17	16	7	▲ 13
Copper	ppm	ASTM D5185m	>70	40	8	▲ 24
Tin	ppm	ASTM D5185m	>15	4	1	2
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.

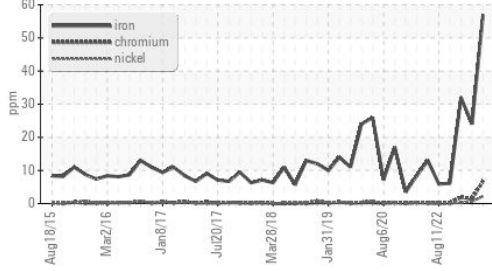
Silicon	ppm	ASTM D5185m	>25	13	7	7
Potassium	ppm	ASTM D5185m	>20	33	8	▲ 53
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	11.3	9.8	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.2	20.6	21.8
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

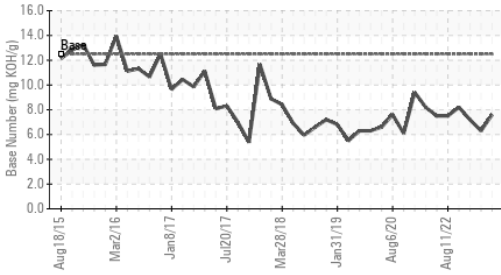
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		16	5	23
Boron	ppm	ASTM D5185m	151	79	38	48
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	44	36	40
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	0	882	651	688
Calcium	ppm	ASTM D5185m	2046	2164	1733	1880
Phosphorus	ppm	ASTM D5185m	1043	952	762	782
Zinc	ppm	ASTM D5185m	943	1219	929	944
Sulfur	ppm	ASTM D5185m	5012	3761	3111	3735
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.2	17.6	18.2
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.6	6.3	7.2
Visc @ 100°C	cSt	ASTM D445	14.4	15.1	14.4	14.3

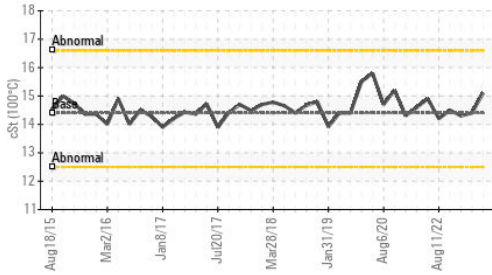
▲ Ferrous Alloys



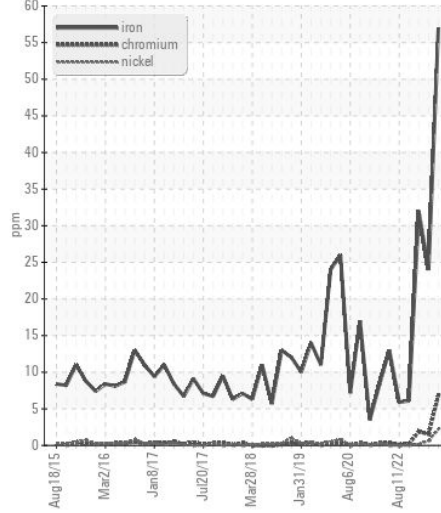
Base Number



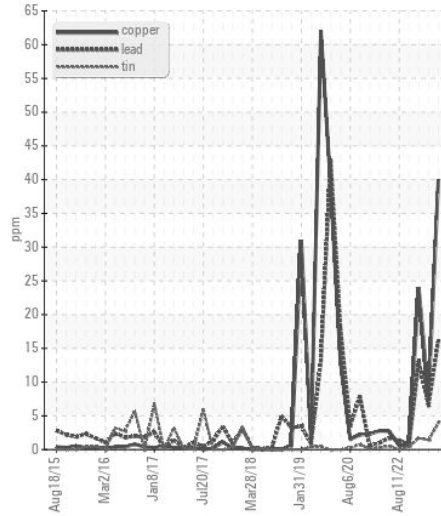
Viscosity @ 100°C



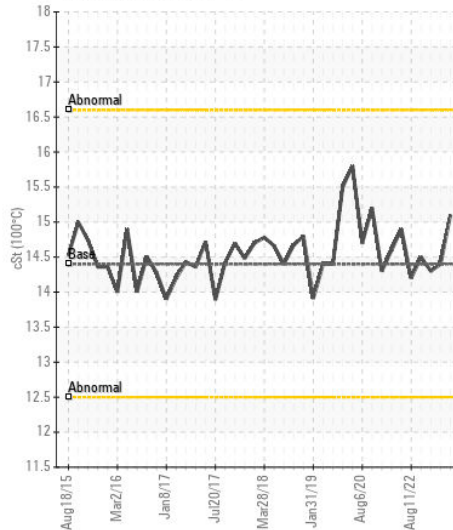
▲ Ferrous Alloys



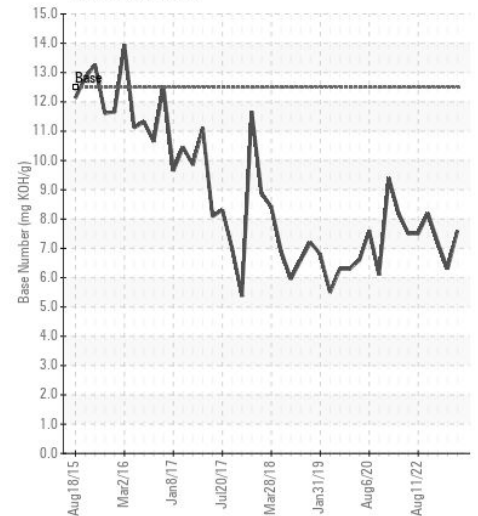
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0042774 **Received** : 12 Jan 2024
Lab Number : 06058939 **Diagnosed** : 15 Jan 2024
Unique Number : 10830321 **Diagnostician** : Don Baldrige
Test Package : MAR 2

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 ST. LOUIS, MO
 US 63111
 Contact: BRIAN GRIEWING
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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)