MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Area
NEIL N DIEHL
Machine Id
[NEIL N DIEHL] 008 639030-8
Component
Starboard Genset
Fluid
CHEVRON DELO 400 XLE 15W40 (--- 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.

WEAR

All component wear rates are normal.

CONTAMINATION

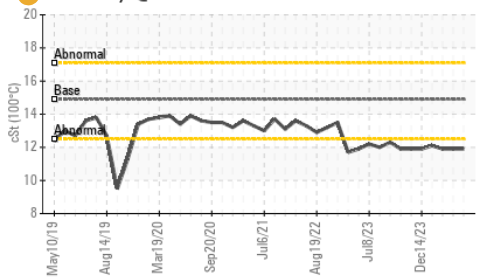
There is no indication of any contamination in the oil.

FLUID CONDITION

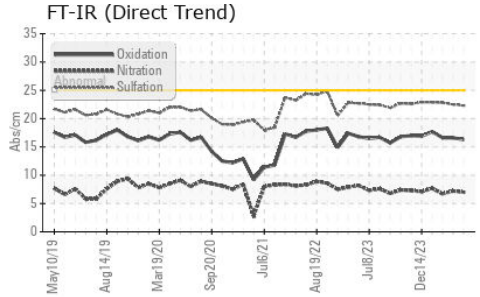
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065827	MW06179588	MW0065829
Sample Date		Client Info		21 Apr 2024	22 Mar 2024	16 Feb 2024
Machine Age	hrs	Client Info		5464	5126	4711
Oil Age	hrs	Client Info		355	45	333
Filter Age	hrs	Client Info		355	0	333
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ATTENTION	ATTENTION	ATTENTION
Iron	ppm	ASTM D5185m	>50	6	5	6
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	4	2	3
Lead	ppm	ASTM D5185m	>17	0	<1	0
Copper	ppm	ASTM D5185m	>70	22	31	30
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	6	5	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		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.0	7.2	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	22.5	22.8
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
Sodium	ppm	ASTM D5185m		<1	<1	<1
Boron	ppm	ASTM D5185m		340	363	363
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		122	131	121
Manganese	ppm	ASTM D5185m		1	2	2
Magnesium	ppm	ASTM D5185m		591	665	629
Calcium	ppm	ASTM D5185m		1518	1725	1486
Phosphorus	ppm	ASTM D5185m	760	693	732	690
Zinc	ppm	ASTM D5185m	830	813	828	814
Sulfur	ppm	ASTM D5185m	2770	2708	2988	2767
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	16.6	16.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	8.5	8.8	8.6
Visc @ 100°C	cSt	ASTM D445	14.9	11.9	11.9	11.9

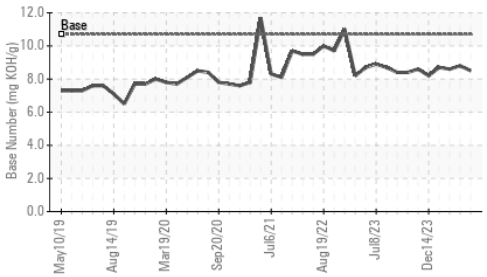
Viscosity @ 100°C



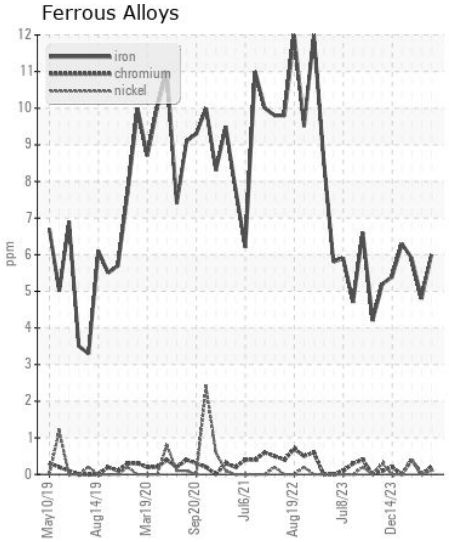
FT-IR (Direct Trend)



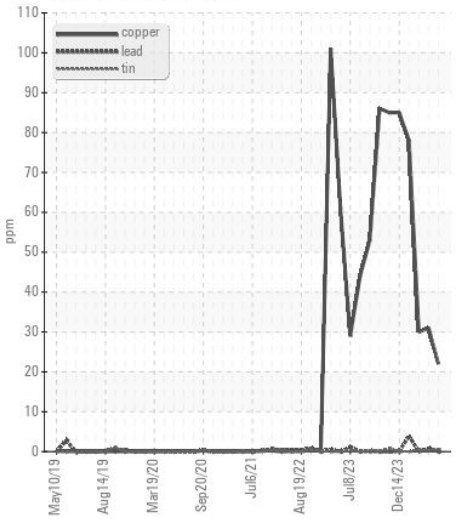
Base Number



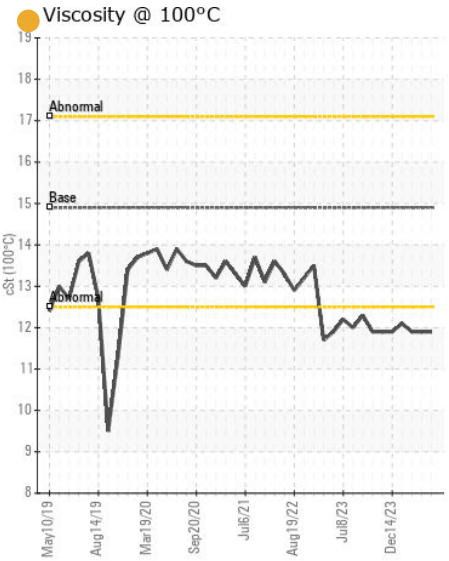
Ferrous Alloys



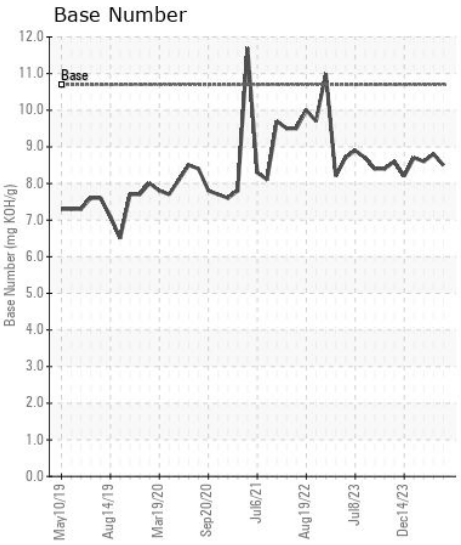
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065827
Lab Number : 06178579
Unique Number : 11029905
Test Package : MAR 2

Received : 14 May 2024
Tested : 15 May 2024
Diagnosed : 16 May 2024 - Sean Felton

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)

INGRAM BARGE
900 S 3RD ST
PADUCAH, KY
US 42003
Contact: ALLEN WILLHELM
allen.willhelm@ingrambarge.com
T: (270)415-4467
F: (615)695-3697