MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ATTENTION

Machine Id
ONAN SIGNET RELIANCE
Component
Starboard Genset
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (6 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

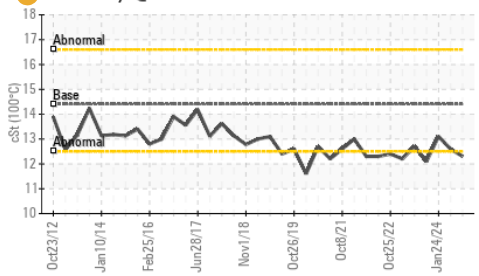
Light fuel dilution occurring. No other contaminants were detected in the oil.

FLUID CONDITION

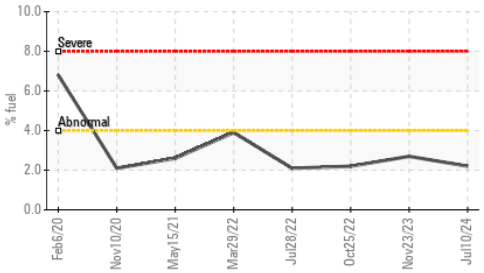
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0052090	MW0052111	MW0034670
Sample Date		Client Info		10 Jul 2024	11 Apr 2024	24 Jan 2024
Machine Age	hrs	Client Info		23869	23718	23589
Oil Age	hrs	Client Info		299	140	500
Filter Age	hrs	Client Info		0	140	500
Oil Changed		Client Info		N/A	Changed	N/A
Filter Changed		Client Info		N/A	Changed	N/A
Sample Status				ATTENTION	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	5	5	3
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m	>12	3	3	3
Lead	ppm	ASTM D5185m	>17	<1	2	2
Copper	ppm	ASTM D5185m	>70	2	2	<1
Tin	ppm	ASTM D5185m	>15	0	1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	5	6	6
Potassium	ppm	ASTM D5185m	>20	3	2	3
Fuel	%	ASTM D3524	>4.0	▲ 2.2	<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	6.5	5.7	5.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.2	21.9	21.4
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		3	4	3
Boron	ppm	ASTM D5185m	151	363	393	319
Barium	ppm	ASTM D5185m	0.4	0	<1	0
Molybdenum	ppm	ASTM D5185m	250	110	106	105
Manganese	ppm	ASTM D5185m		0	1	0
Magnesium	ppm	ASTM D5185m	0	588	543	628
Calcium	ppm	ASTM D5185m	2046	1637	1596	1607
Phosphorus	ppm	ASTM D5185m	1043	675	783	809
Zinc	ppm	ASTM D5185m	943	917	878	958
Sulfur	ppm	ASTM D5185m	5012	2532	3008	2871
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	16.1	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	9.0	9.3	9.0
Visc @ 100°C	cSt	ASTM D445	14.4	● 12.3	12.6	13.1

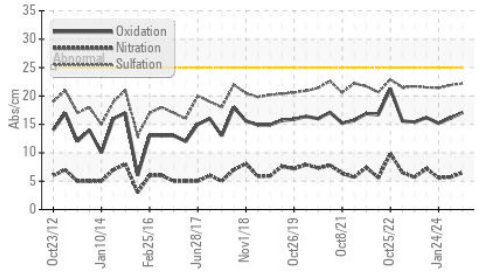
Viscosity @ 100°C



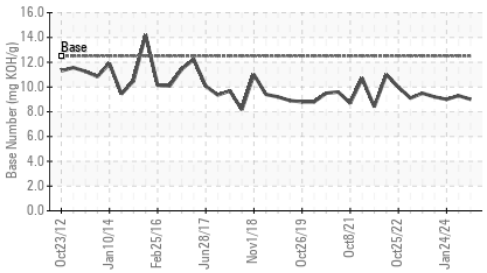
Fuel Dilution



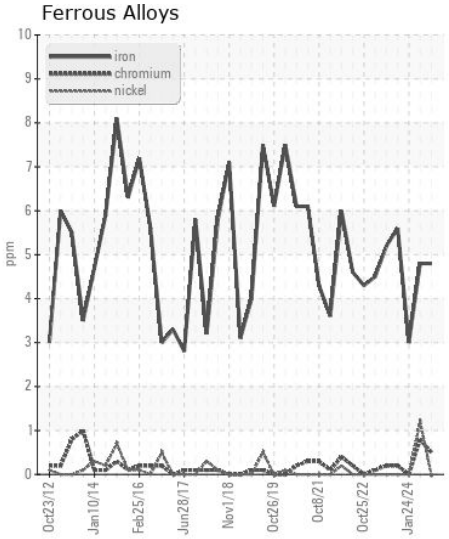
FT-IR (Direct Trend)



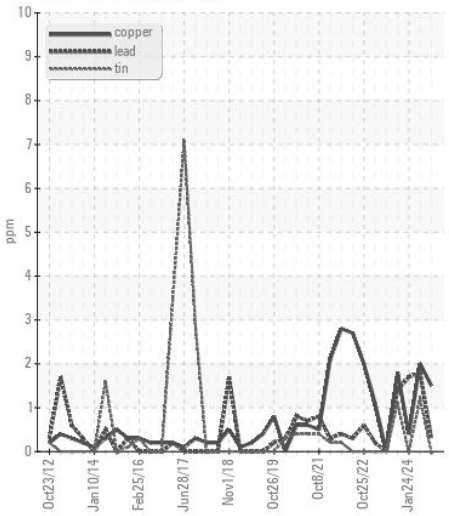
Base Number



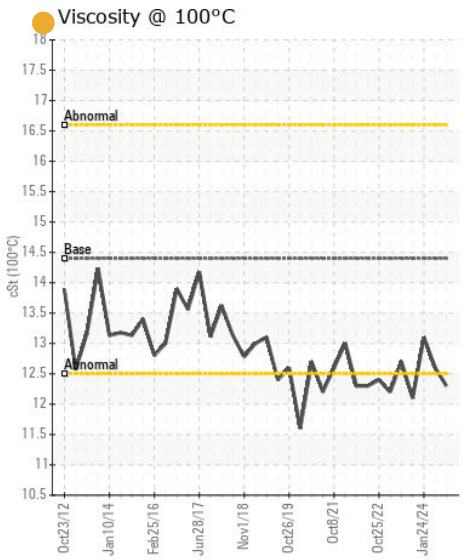
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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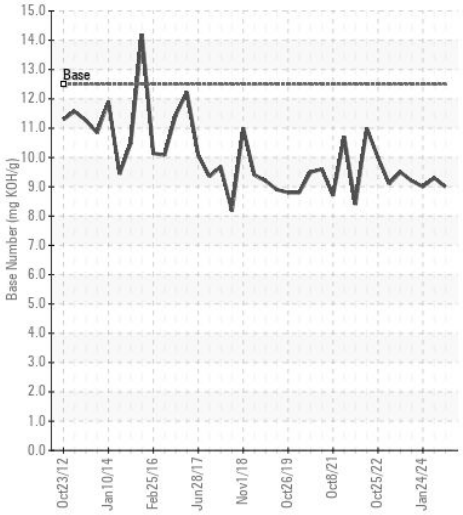

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0052090 **Received** : 16 Jul 2024
Lab Number : 06237603 **Tested** : 18 Jul 2024
Unique Number : 11126437 **Diagnosed** : 18 Jul 2024 - Don Baldridge
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

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)

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