MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
JOHN R OPERLE
Machine Id
[JOHN R OPERLE] 007 630998-7
Component
Port Genset
Fluid
CHEVRON DELO 400 LE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

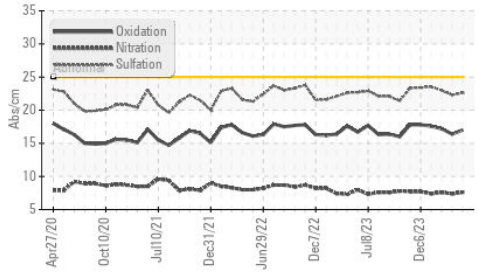
There is no indication of any contamination in the oil.

FLUID CONDITION

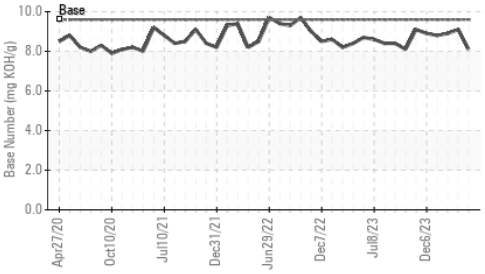
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0066226	MW0066015	MW0066006
Sample Date		Client Info		20 Jun 2024	18 May 2024	15 Apr 2024
Machine Age	hrs	Client Info		38149	37758	3735
Oil Age	hrs	Client Info		390	411	407
Filter Age	hrs	Client Info		0	411	407
Oil Changed		Client Info		N/A	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	MARGINAL
Iron	ppm	ASTM D5185m	>50	4	5	8
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	3	2	4
Lead	ppm	ASTM D5185m	>17	0	0	<1
Copper	ppm	ASTM D5185m	>70	0	1	3
Tin	ppm	ASTM D5185m	>15	<1	0	<1
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	4	5	8
Potassium	ppm	ASTM D5185m	>20	<1	0	2
Fuel		WC Method	>4.0	<1.0	<1.0	▲ 2.4
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	7.6	7.4	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.6	22.3	23.0
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	0
Boron	ppm	ASTM D5185m		301	291	416
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		103	128	144
Manganese	ppm	ASTM D5185m		2	<1	1
Magnesium	ppm	ASTM D5185m		562	693	710
Calcium	ppm	ASTM D5185m		1561	1748	1665
Phosphorus	ppm	ASTM D5185m	1200	891	736	789
Zinc	ppm	ASTM D5185m	1300	1063	901	892
Sulfur	ppm	ASTM D5185m	3200	3333	2978	2989
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.0	16.4	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	8.1	9.1	8.9
Visc @ 100°C	cSt	ASTM D445	15.7	12.9	12.1	12.3

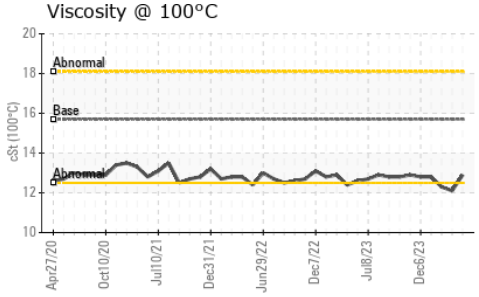
FT-IR (Direct Trend)



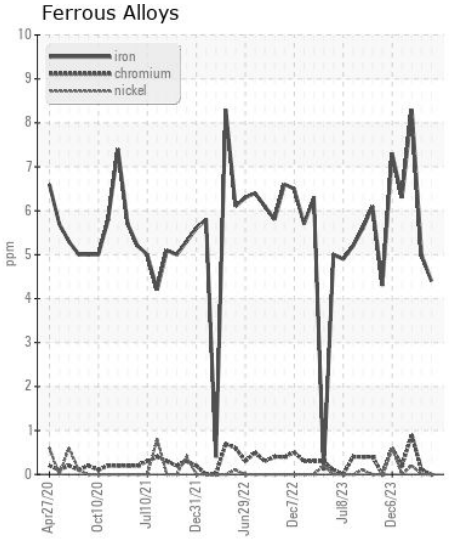
Base Number



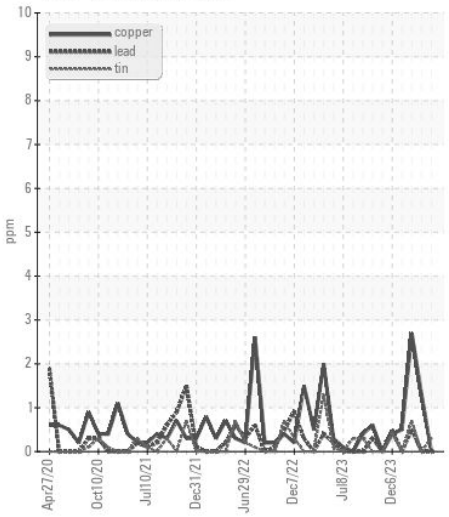
Viscosity @ 100°C



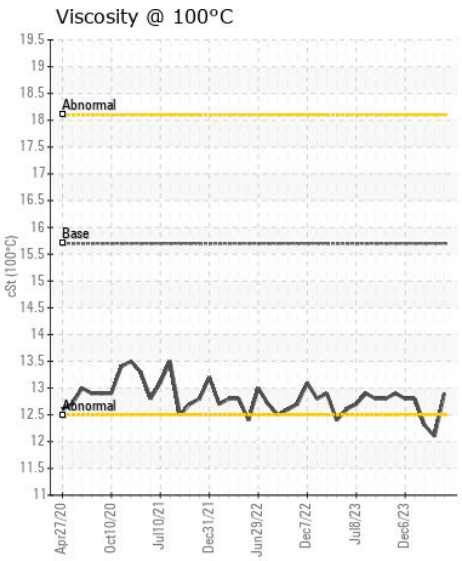
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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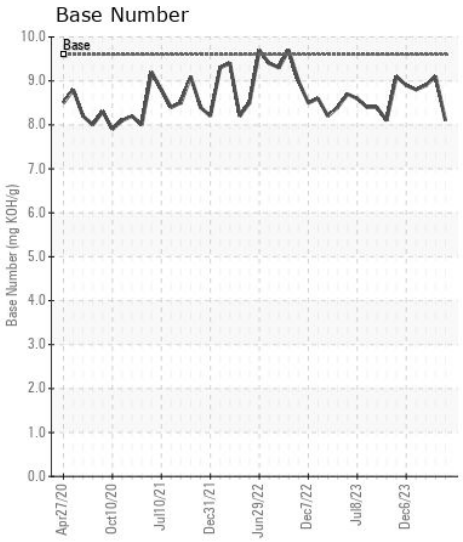

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0066226
Lab Number : 06227254
Unique Number : 11110747
Test Package : MAR 2

Received : 03 Jul 2024
Tested : 05 Jul 2024
Diagnosed : 05 Jul 2024 - Wes Davis

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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