MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CHARLIE T
Component
Port Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (30 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

An increase in the iron level is noted. All other component wear rates are normal.

CONTAMINATION

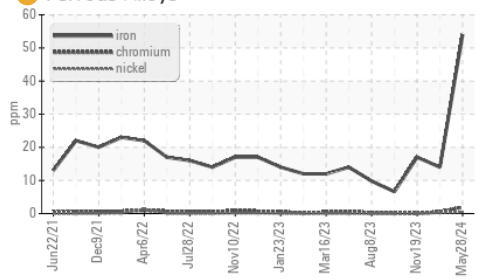
There is no indication of any contamination in the oil.

FLUID CONDITION

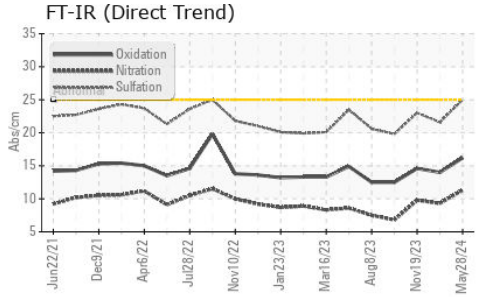
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0071509	MW0059562	MW0059550
Sample Date		Client Info		28 May 2024	14 Mar 2024	19 Nov 2023
Machine Age	hrs	Client Info		24533	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	54	14	17
Chromium	ppm	ASTM D5185m	>8	2	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>3	23	11	10
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	3	3	3
Lead	ppm	ASTM D5185m	>18	5	1	2
Copper	ppm	ASTM D5185m	>80	5	2	1
Tin	ppm	ASTM D5185m	>14	1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	8	4	4
Potassium	ppm	ASTM D5185m	>20	5	4	4
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		2.8	1.9	2.6
Nitration	Abs/cm	*ASTM D7624	>20	11.3	9.3	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.0	21.6	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	>75	5	4	2
Boron	ppm	ASTM D5185m		98	98	102
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		68	45	54
Manganese	ppm	ASTM D5185m		4	<1	0
Magnesium	ppm	ASTM D5185m		1139	620	730
Calcium	ppm	ASTM D5185m		2855	1570	1871
Phosphorus	ppm	ASTM D5185m	1360	1208	668	785
Zinc	ppm	ASTM D5185m	1480	1326	756	935
Sulfur	ppm	ASTM D5185m		5606	2923	3289
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	14.0	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	5.8	7.7	6.9
Visc @ 100°C	cSt	ASTM D445	15.1	14.1	13.3	14.0

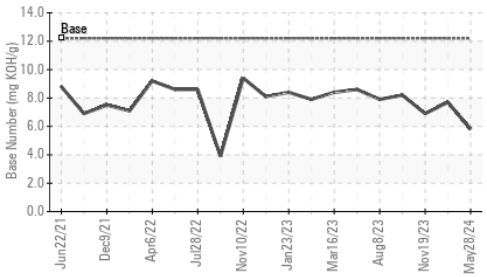
Ferrous Alloys



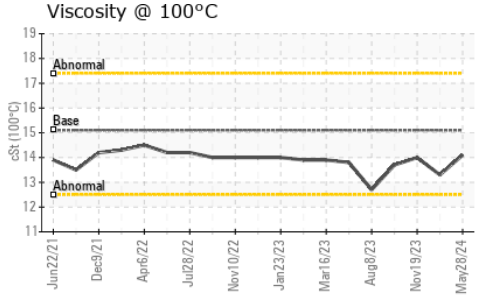
FT-IR (Direct Trend)



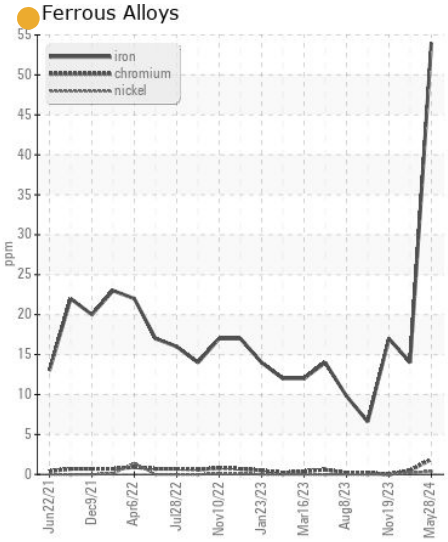
Base Number



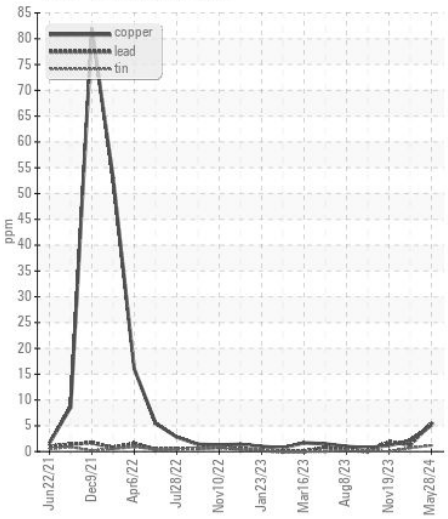
Viscosity @ 100°C



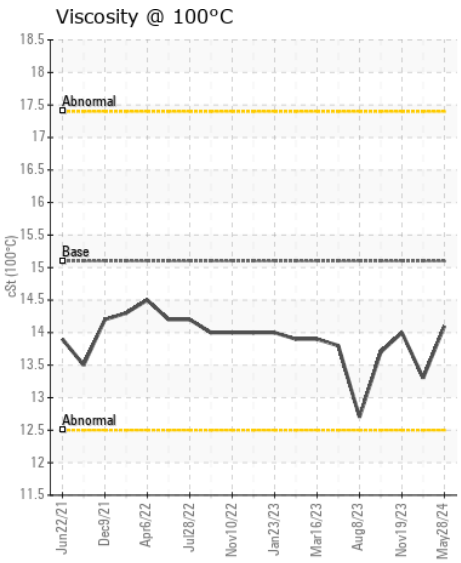
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0071509
Lab Number : 06196317
Unique Number : 11058440
Test Package : MAR 2

Received : 31 May 2024
Tested : 03 Jun 2024
Diagnosed : 03 Jun 2024 - Don Baldridge

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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