MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Area
CARESSA K
Machine Id
[CARESSA K] CARESSA K CARESSA K
Component
Center Main Engine
Fluid
SHELL ROTELLA T 15W40 (20 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

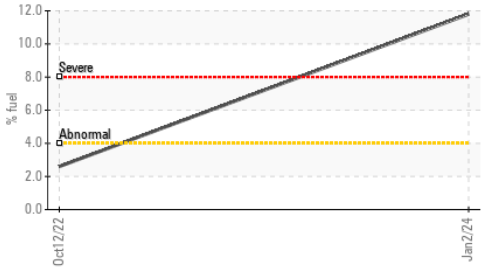
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

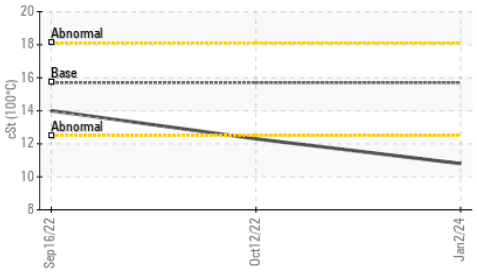
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0060293	MW0046609	MW0046577
Sample Date		Client Info		02 Jan 2024	12 Oct 2022	16 Sep 2022
Machine Age	hrs	Client Info		7091	44942	44380
Oil Age	hrs	Client Info		471	561	1000
Filter Age	hrs	Client Info		471	561	1000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ATTENTION	NORMAL
Iron	ppm	ASTM D5185m	>120	0	4	2
Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	1
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>300	154	9	2
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	4	3	4
Potassium	ppm	ASTM D5185m	>20	2	2	3
Fuel	%	ASTM D3524	>4.0	11.8	2.6	<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	7.1	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.5	22.6	22.4
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		0	1	<1
Boron	ppm	ASTM D5185m	316	6	255	266
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	51	54	54
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	24	14	286	294
Calcium	ppm	ASTM D5185m	2292	2230	1860	1832
Phosphorus	ppm	ASTM D5185m	1064	965	907	889
Zinc	ppm	ASTM D5185m	1160	1146	1023	1015
Sulfur	ppm	ASTM D5185m	4996	2945	3799	3768
Oxidation	Abs/.1mm	*ASTM D7414	>25	8.1	17	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	10.44	8.88	8.57
Visc @ 100°C	cSt	ASTM D445	15.7	10.8	12.3	14.0

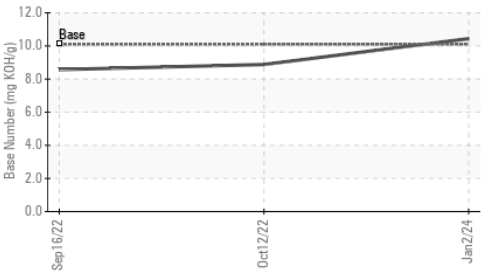
Fuel Dilution



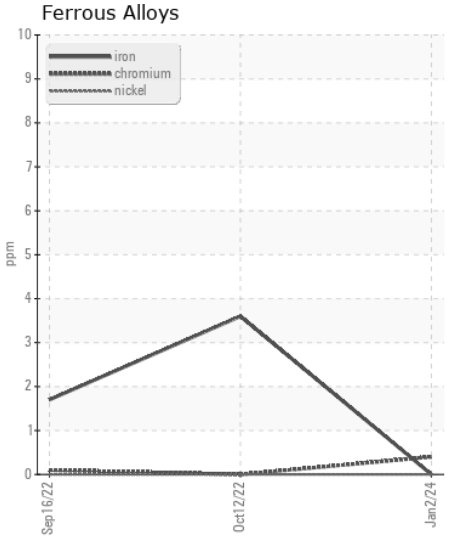
Viscosity @ 100°C



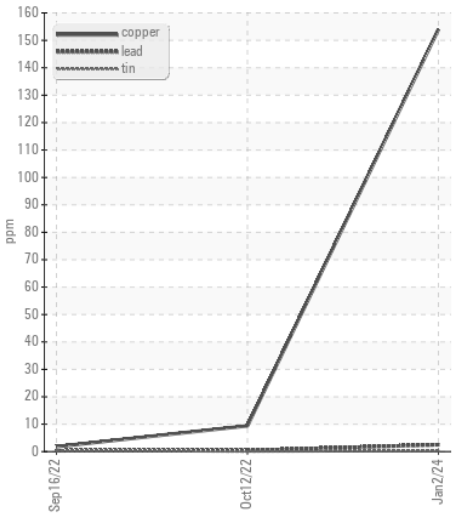
Base Number



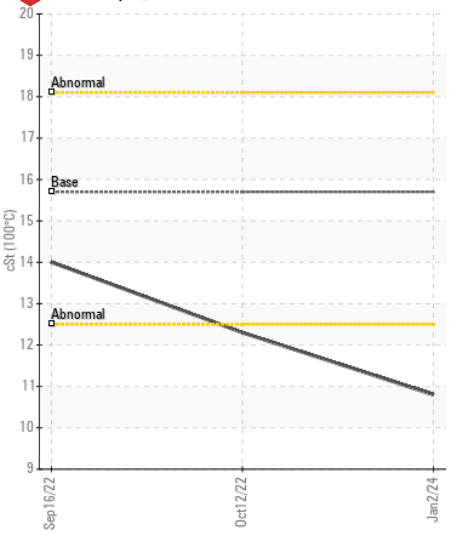
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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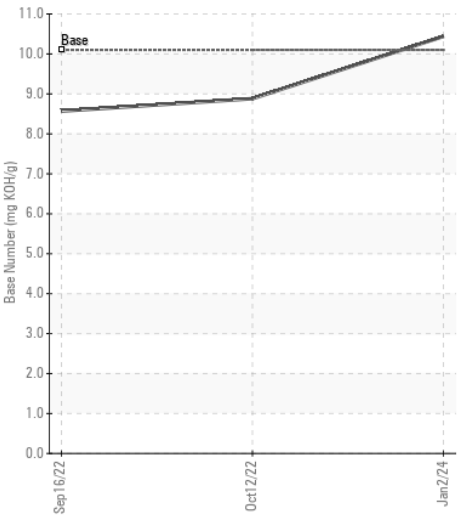

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0060293 **Recieved** : 01 Feb 2024
Lab Number : 06077810 **Diagnosed** : 05 Feb 2024
Unique Number : 10859901 **Diagnostician** : Wes Davis
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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