MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
SIGNET WARHORSE III - HPU
Component
Auxiliary Diesel Engine
Fluid
CHEVRON DELO 400 SDE SAE 15W40 (12 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

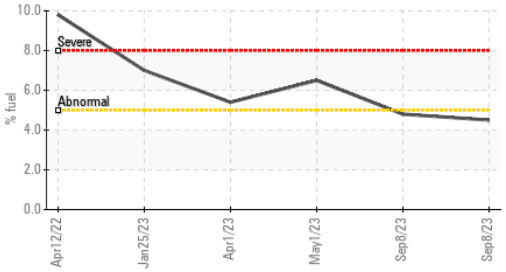
There is a moderate amount of fuel present in the oil.

FLUID CONDITION

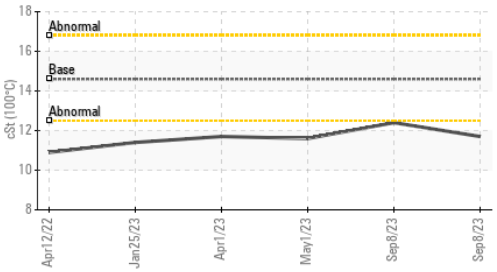
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0040371	MW0040373	MW0040465
Sample Date		Client Info		08 Sep 2023	08 Sep 2023	01 May 2023
Machine Age	hrs	Client Info		2477	2186	2026
Oil Age	hrs	Client Info		371	208	48
Filter Age	hrs	Client Info		371	208	48
Oil Changed		Client Info		N/A	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				ABNORMAL	MARGINAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	4	4	2
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	<1
Lead	ppm	ASTM D5185m	>40	2	<1	0
Copper	ppm	ASTM D5185m	>330	25	1	4
Tin	ppm	ASTM D5185m	>15	2	<1	<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	7	19	17
Potassium	ppm	ASTM D5185m	>20	3	2	1
Fuel	%	ASTM D3524	>5	▲ 4.5	▲ 4.8	▲ 6.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.4	6.8	5.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	17.4	19.8
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		<1	1	3
Boron	ppm	ASTM D5185m		174	134	349
Barium	ppm	ASTM D5185m		2	2	0
Molybdenum	ppm	ASTM D5185m		68	120	106
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		596	613	620
Calcium	ppm	ASTM D5185m		1293	1174	1467
Phosphorus	ppm	ASTM D5185m	760	662	681	709
Zinc	ppm	ASTM D5185m	800	786	815	842
Sulfur	ppm	ASTM D5185m	3000	2741	3313	2946
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.1	13.8	14.2
Base Number (BN)	mg KOH/g	ASTM D2896	10	8.0	7.8	8.0
Visc @ 100°C	cSt	ASTM D445	14.6	▲ 11.7	12.4	▲ 11.6
Viscosity Index (VI)	Scale	ASTM D2270	134	140	---	---

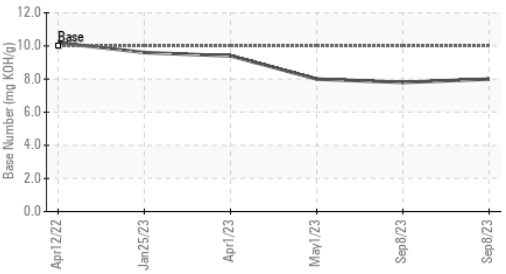
Fuel Dilution



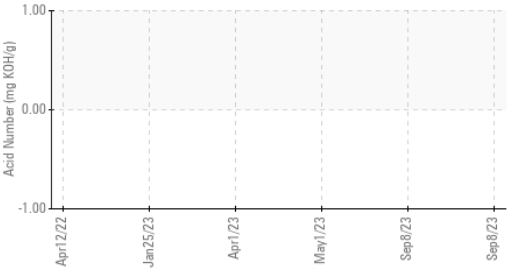
Viscosity @ 100°C



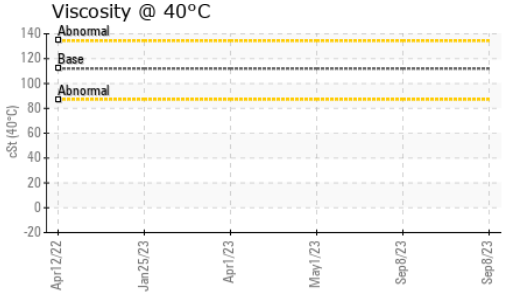
Base Number



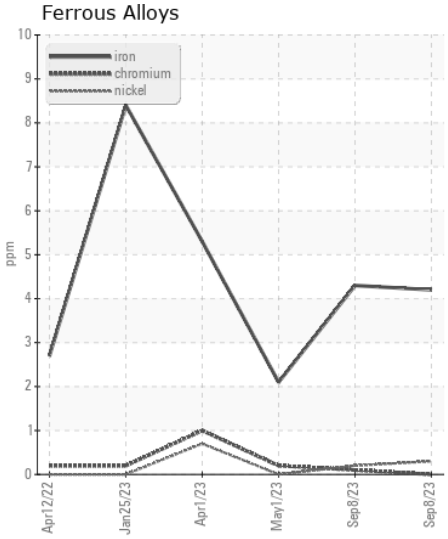
Acid Number



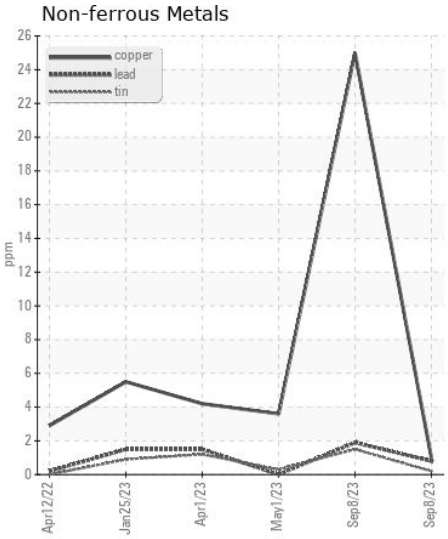
Viscosity @ 40°C



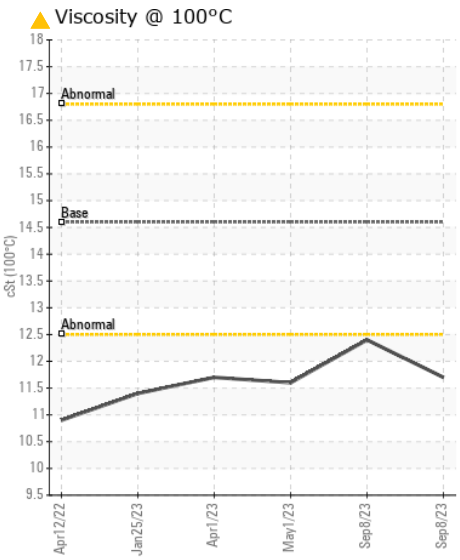
Ferrous Alloys



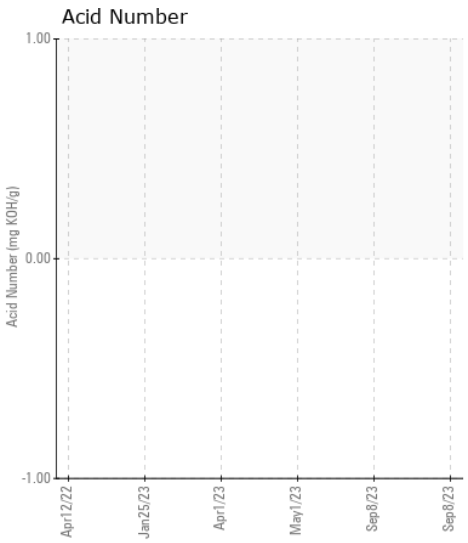
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0040371 **Recieved** : 12 Oct 2023
Lab Number : 05976948 **Diagnosed** : 17 Oct 2023
Unique Number : 10688898 **Diagnostician** : Jonathan Hester
Test Package : MAR 2 (Additional Tests: KV40, PercentFuel, VI)

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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