MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
CATAMARAN X4
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (--- QTS)

RECOMMENDATION

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

WEAR

The iron level is abnormal. All other component wear rates are normal.

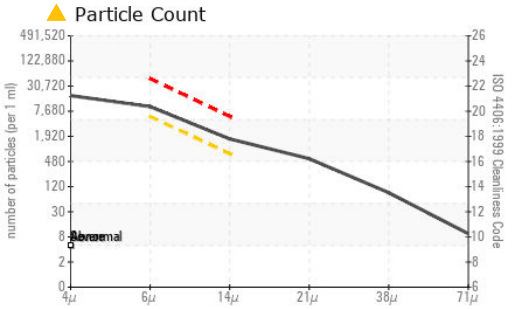
CONTAMINATION

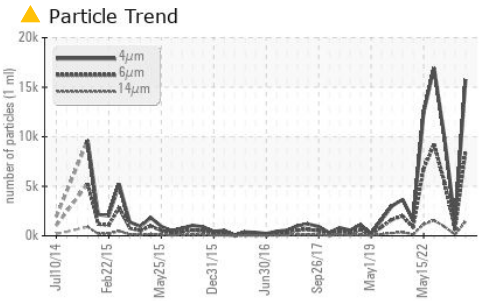
There is a high amount of particulates present in the oil. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

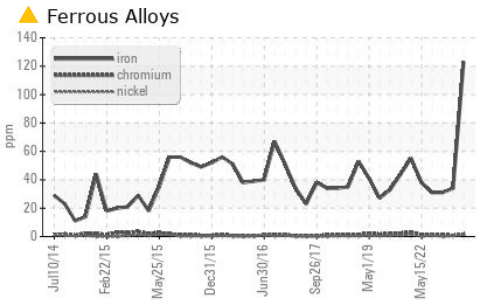
FLUID CONDITION

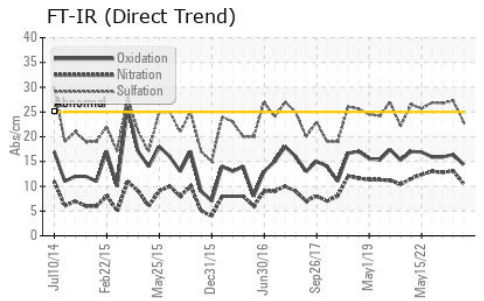
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

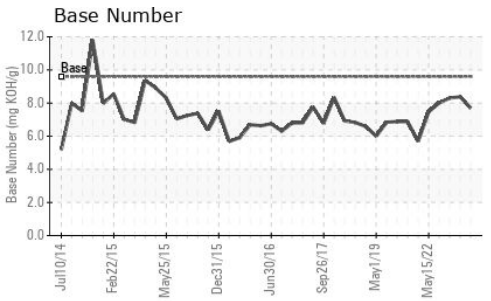
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013494	KL0012669	KL0008922
Sample Date		Client Info		11 Jun 2024	11 Jul 2023	13 Dec 2022
Machine Age	hrs	Client Info		10338	18702	18702
Oil Age	hrs	Client Info		258	294	311
Filter Age	hrs	Client Info		258	294	311
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	MARGINAL	ATTENTION
Iron	ppm	ASTM D5185m	>75	▲ 123	34	31
Chromium	ppm	ASTM D5185m	>8	2	<1	1
Nickel	ppm	ASTM D5185m	>2	1	<1	0
Titanium	ppm	ASTM D5185m	>3	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	8	2	3
Lead	ppm	ASTM D5185m	>18	1	4	2
Copper	ppm	ASTM D5185m	>80	45	▲ 107	64
Tin	ppm	ASTM D5185m	>14	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	6	4	5
Potassium	ppm	ASTM D5185m	>20	7	4	3
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		2.5	4.2	3.3
Nitration	Abs/cm	*ASTM D7624	>20	10.5	13.1	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.0	27.3	26.8
Particles >4µm		ASTM D7647		15764	1314	9861
Particles >6µm		ASTM D7647	>5000	● 8588	716	● 5372
Particles >14µm		ASTM D7647	>640	▲ 1461	122	● 914
Particles >21µm		ASTM D7647	>160	▲ 492	41	● 308
Particles >38µm		ASTM D7647	>40	● 76	6	● 48
Particles >71µm		ASTM D7647	>10	8	1	5
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ 20/18	17/14	● 20/17
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	99	15	5
Boron	ppm	ASTM D5185m		22	23	18
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		22	1	3
Manganese	ppm	ASTM D5185m		2	<1	<1
Magnesium	ppm	ASTM D5185m		858	794	649
Calcium	ppm	ASTM D5185m		1253	1467	1348
Phosphorus	ppm	ASTM D5185m	1200	858	715	658
Zinc	ppm	ASTM D5185m	1300	982	883	805
Sulfur	ppm	ASTM D5185m	3200	3347	3298	2878
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	16.4	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	7.7	8.38	8.30
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	15.1	14.0

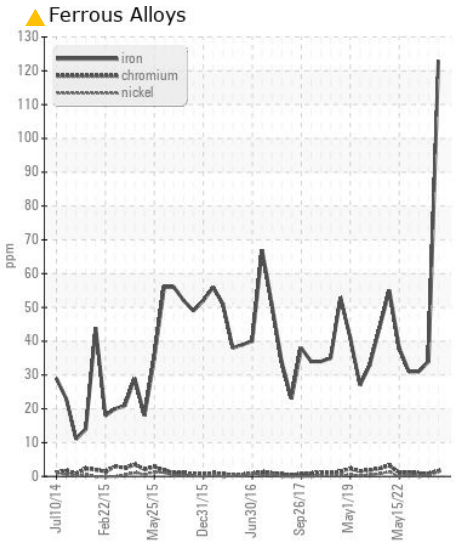


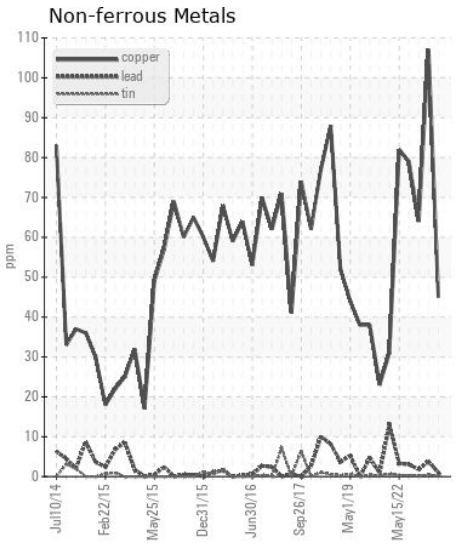


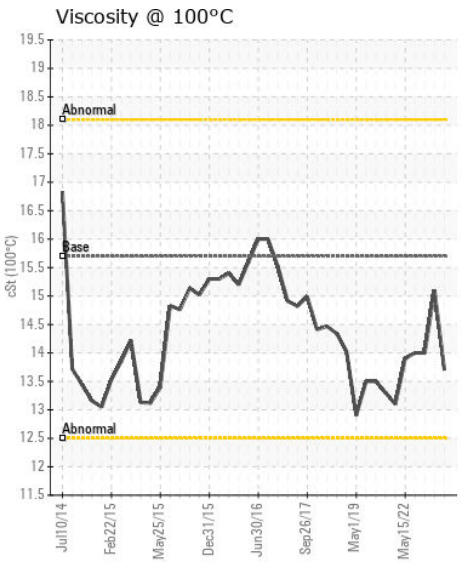


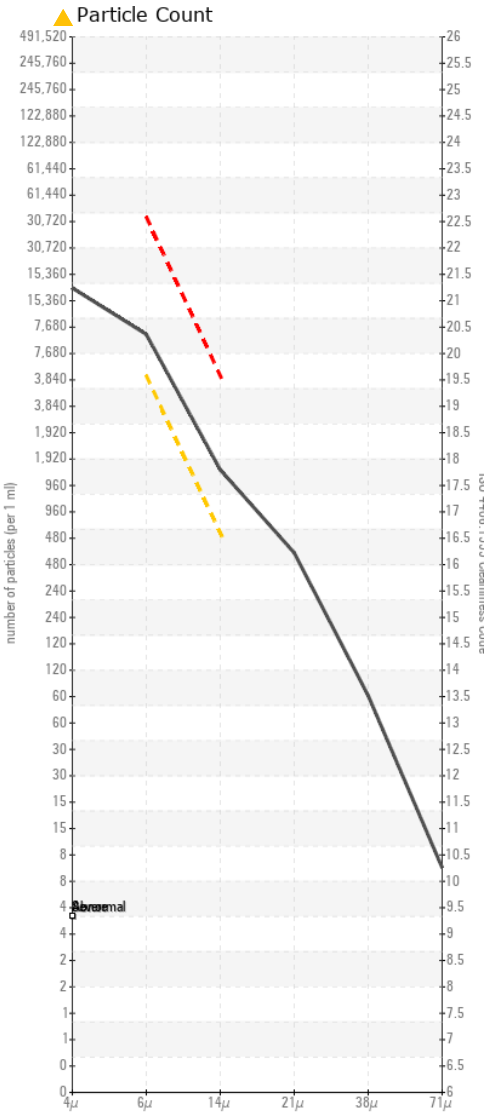


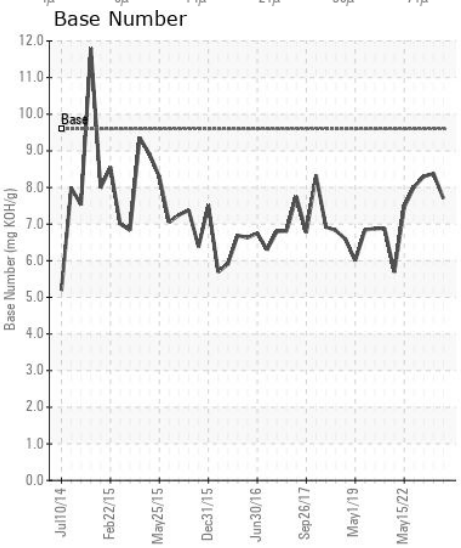












Jul10/14 Feb22/15 May25/15 Dec31/15 Jun30/16 Sep26/17 May1/19 May15/22

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013494
Lab Number : 06212765
Unique Number : 11085629
Test Package : MOB 2 (Additional Tests: Glycol, PrtCount)
Received : 17 Jun 2024
Tested : 19 Jun 2024
Diagnosed : 19 Jun 2024 - Angela Borella

Certificate L2367

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)

EXPEDITIONS
658 FRONT ST, SUITE 127
LAHAINA, HI
US 96761
Contact: BILL CALDWELL
bill@go-lanai.com
T: (800)695-2624
F: (808)661-0544