MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
RIG 1
Machine Id
CATERPILLAR 3512 R1-G-01
Component
Diesel Engine
Fluid
CHEVRON 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

CONTAMINATION

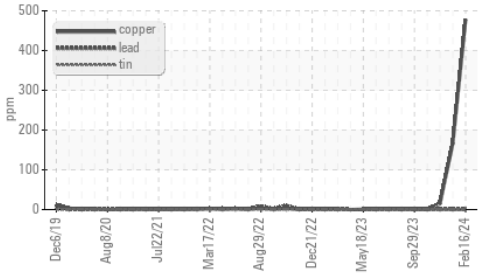
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

FLUID CONDITION

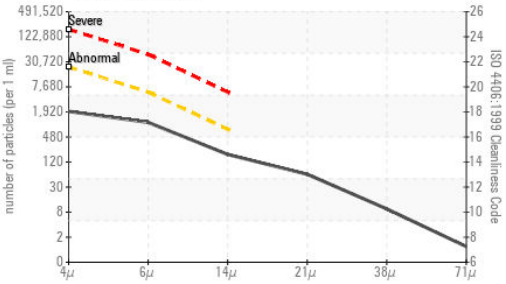
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013836	KL0014041	KL0013975
Sample Date		Client Info		16 Feb 2024	11 Jan 2024	12 Dec 2023
Machine Age	days	Client Info		45338	45303	45272
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	1	4	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	4	2
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	▲ 478	167	15
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	5	7	▲ 29
Potassium	ppm	ASTM D5185m	>20	<1	1	2
Fuel		WC Method	>5	<1.0	<1.0	0.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.7	5.4	5.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.5	23.0	22.7
Particles >4µm		ASTM D7647	>20000	1731	2819	3767
Particles >6µm		ASTM D7647	>5000	943	1536	2052
Particles >14µm		ASTM D7647	>640	161	261	349
Particles >21µm		ASTM D7647	>160	54	88	118
Particles >38µm		ASTM D7647	>40	8	14	18
Particles >71µm		ASTM D7647	>10	1	1	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	18/17/15	19/18/15	19/18/16
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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>50	1	0	0
Boron	ppm	ASTM D5185m		305	364	354
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		117	117	115
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		638	620	618
Calcium	ppm	ASTM D5185m		1471	1418	1586
Phosphorus	ppm	ASTM D5185m		725	727	717
Zinc	ppm	ASTM D5185m		829	792	856
Sulfur	ppm	ASTM D5185m		2530	2963	2953
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	15.6	16.1
Base Number (BN)	mg KOH/g	ASTM D2896		9.17	8.26	10.76
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	13.6	13.3

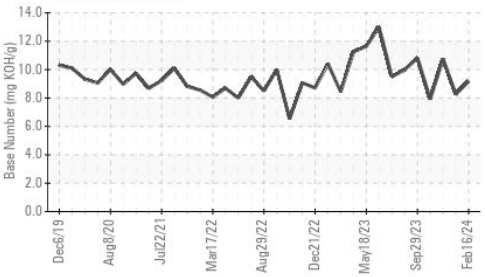
Non-ferrous Metals



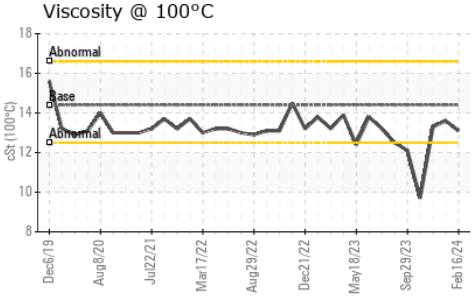
Particle Count



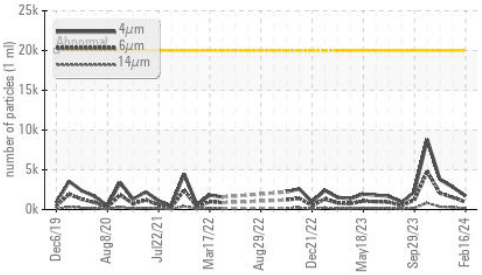
Base Number



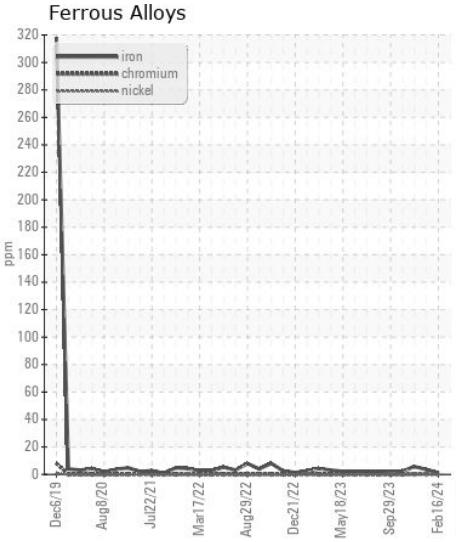
Viscosity @ 100°C



Particle Trend



Ferrous Alloys



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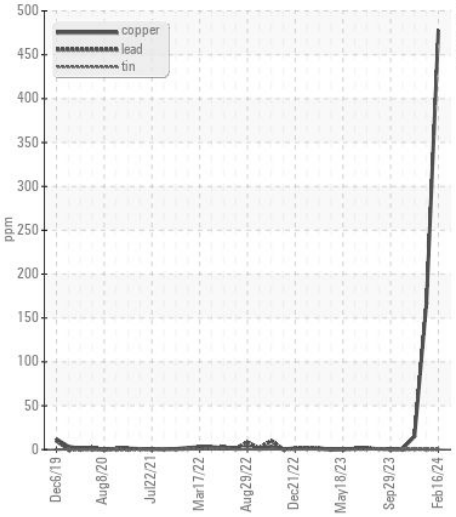

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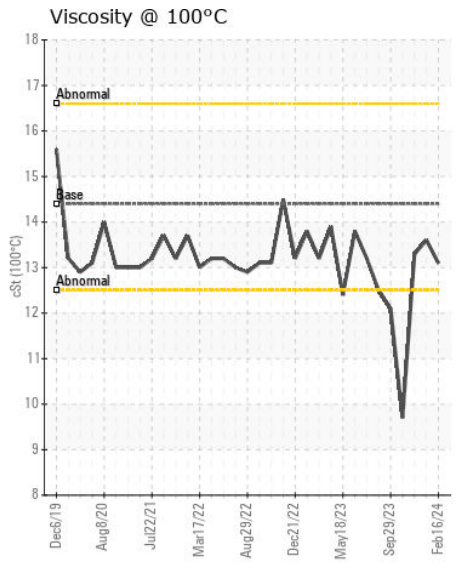

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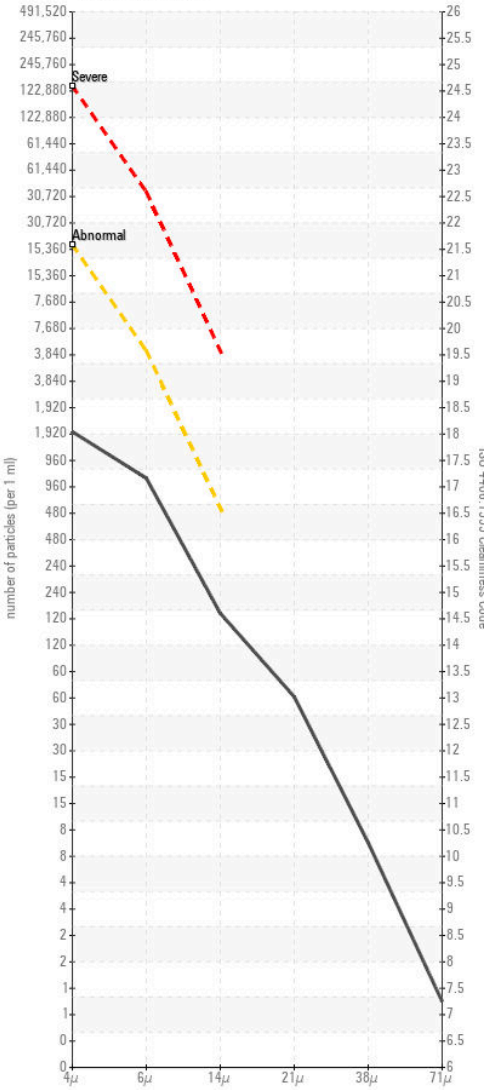

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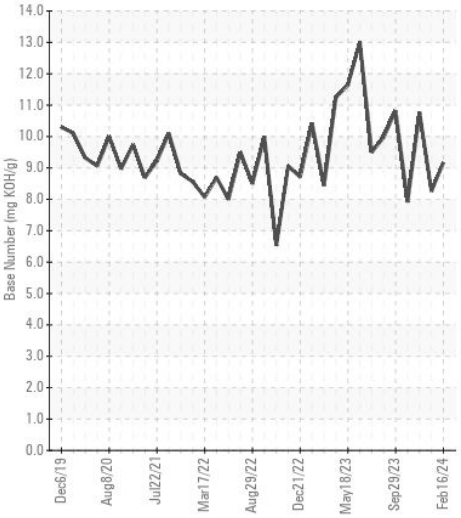

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013836
Lab Number : 06105403
Unique Number : 10903633
Test Package : MOB 2 (Additional Tests: Glycol, PrtCount)

Received : 29 Feb 2024
Tested : 06 Mar 2024
Diagnosed : 06 Mar 2024 - Jonathan Hester

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)

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