MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
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

All component wear rates are normal.

CONTAMINATION

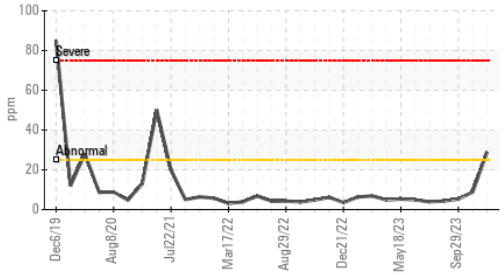
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The amount and size of particulates present in the system are acceptable.

FLUID CONDITION

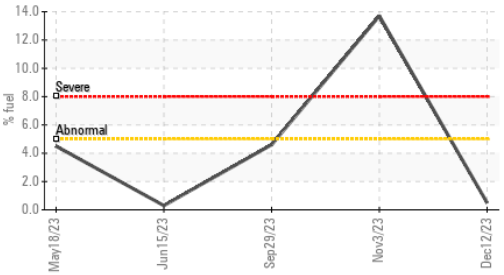
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013975	KL0013126	KL0012902
Sample Date		Client Info		12 Dec 2023	03 Nov 2023	29 Sep 2023
Machine Age	days	Client Info		45272	45233	45196
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	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>100	6	2	2
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	4	0
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	15	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<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	▲ 29	9	5
Potassium	ppm	ASTM D5185m	>20	2	0	1
Fuel	%	ASTM D3524	>5	0.5	⬢ 13.7	▲ 4.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	5.8	6.5	4.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.7	21.9	21.6
Particles >4µm		ASTM D7647	>20000	3767	8804	2210
Particles >6µm		ASTM D7647	>5000	2052	4796	1204
Particles >14µm		ASTM D7647	>640	349	▲ 816	205
Particles >21µm		ASTM D7647	>160	118	▲ 275	69
Particles >38µm		ASTM D7647	>40	18	▲ 42	11
Particles >71µm		ASTM D7647	>10	2	4	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	19/18/16	▲ 20/19/17	18/17/15
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	0	<1	0
Boron	ppm	ASTM D5185m		354	301	418
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		115	108	134
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		618	591	617
Calcium	ppm	ASTM D5185m		1586	1314	1435
Phosphorus	ppm	ASTM D5185m		717	615	707
Zinc	ppm	ASTM D5185m		856	727	781
Sulfur	ppm	ASTM D5185m		2953	2172	2665
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	15.3	14.6
Base Number (BN)	mg KOH/g	ASTM D2896		10.76	7.92	10.82
Visc @ 100°C	cSt	ASTM D445	14.4	13.3	▲ 9.7	▲ 12.1

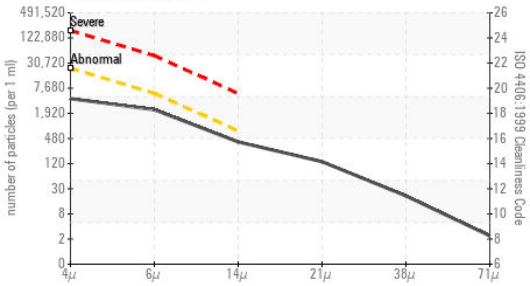
Silicon (ppm)



Fuel Dilution



Particle Count



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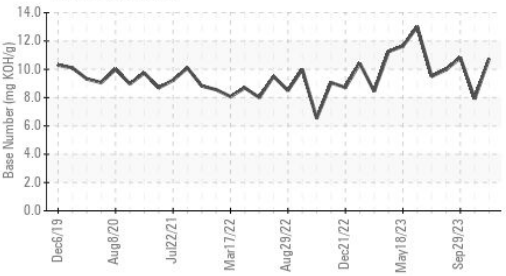
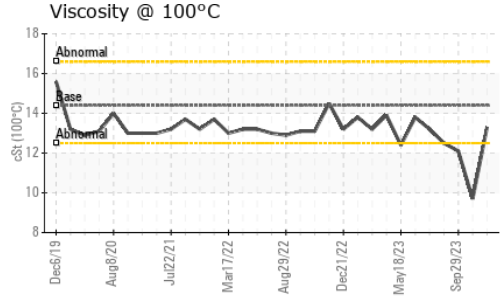
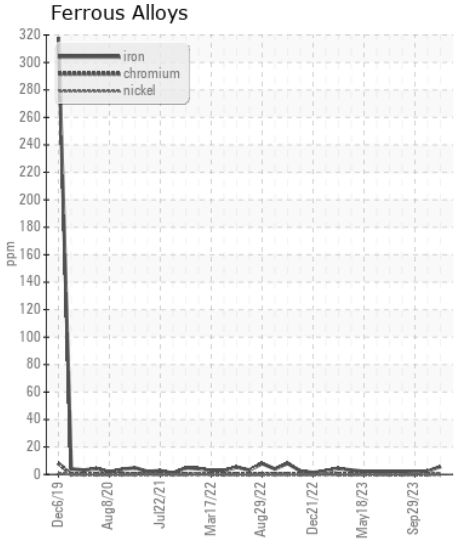


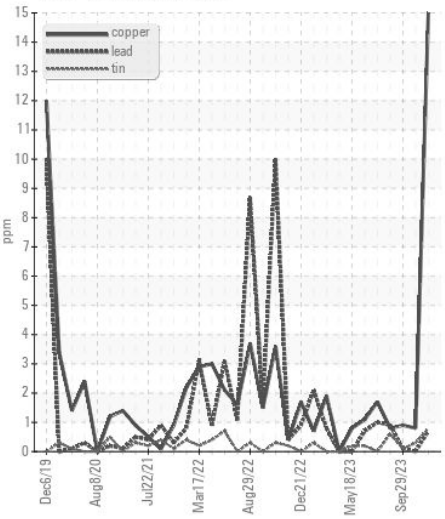
Viscosity @ 100°C



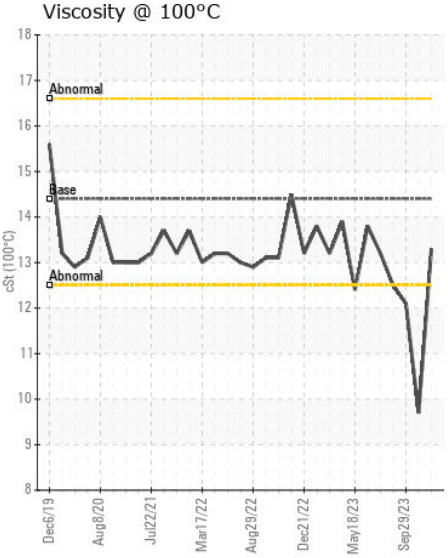
Ferrous Alloys



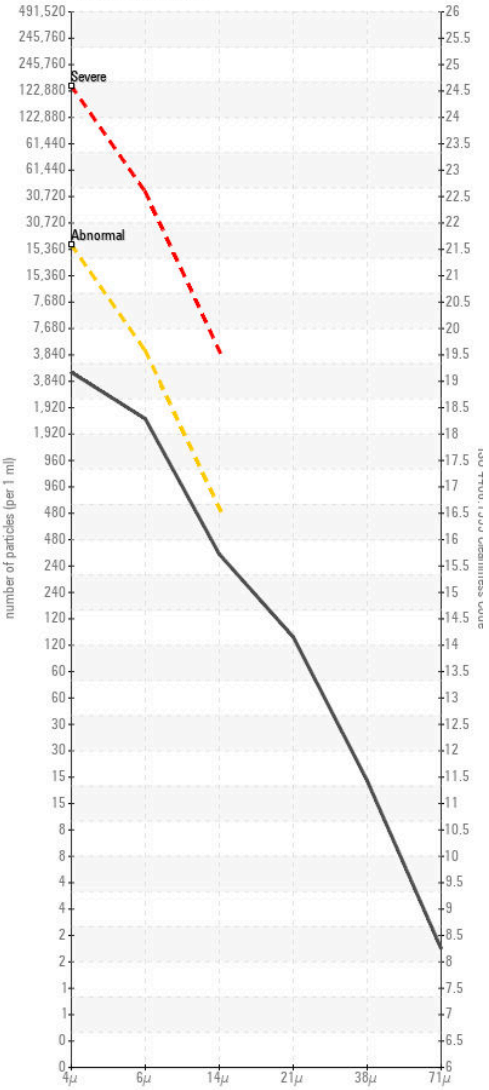
Non-ferrous Metals



Viscosity @ 100°C



Particle Count



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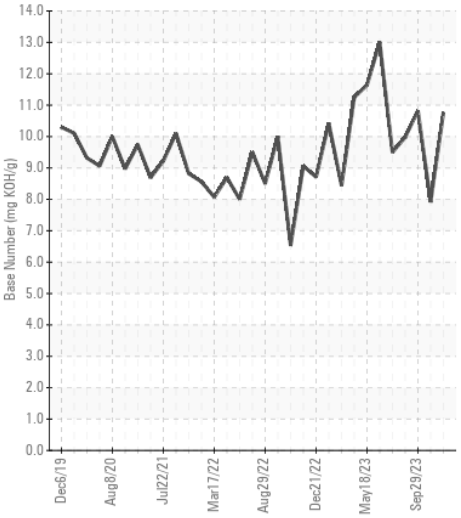

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013975 **Recieved** : 08 Jan 2024
Lab Number : 06055035 **Diagnosed** : 12 Jan 2024
Unique Number : 10820984 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: PercentFuel, PrtCount)

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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