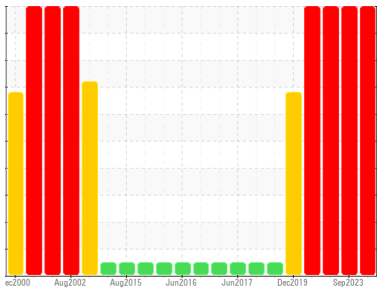
PROBLEM SUMMARY

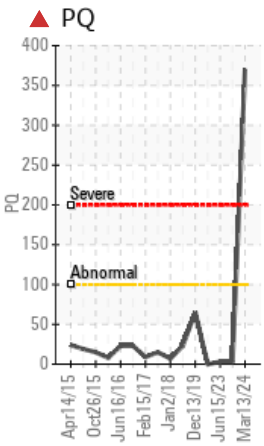
Sample Rating Trend

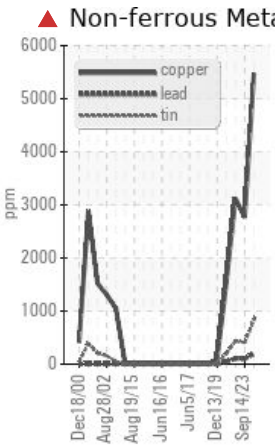


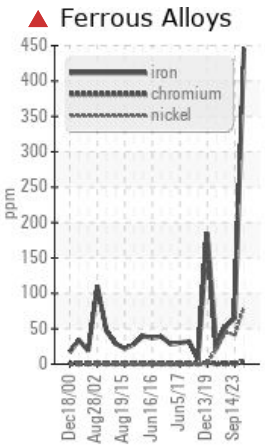
VISUAL METAL

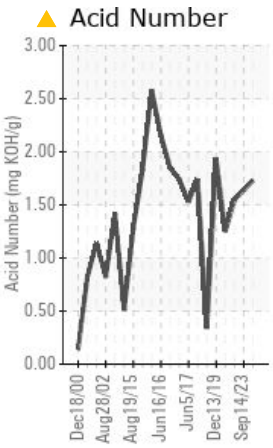
Area
11
Machine Id
11-0040-010-030 SANDER#2 GEARBOX#3
Component
11 Gearbox
Fluid
ESSO CYLESSTIC TK 680 (1 LTR)

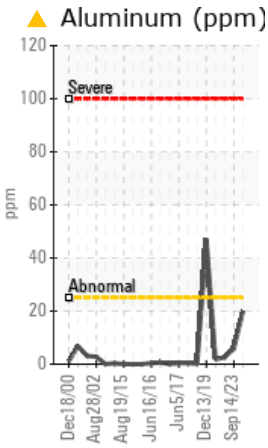
COMPONENT CONDITION SUMMARY







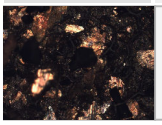




RECOMMENDATION

We advise that you check for visible metal particles in the oil. Wear particles and/or ppm levels are abnormally high indicating the need to review OEM limits with attention to components that may generate this type of wear. Include all test results and maintenance activities that have been performed since the abnormal condition was first detected in this review. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. An inspection for the source(s) of wear may be warranted at this time. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
PQ		ASTM D8184*		▲ **370**	3	3
Iron	ppm	ASTM D5185(m)	>200	▲ **446**	65	53
Nickel	ppm	ASTM D5185(m)	>15	▲ **81**	▲ 41	▲ 45
Aluminum	ppm	ASTM D5185(m)	>25	▲ **20**	6	3
Lead	ppm	ASTM D5185(m)	>100	▲ **196**	▲ 101	▲ 108
Copper	ppm	ASTM D5185(m)	>200	▲ **5476**	▲ 2768	▲ 3118
Tin	ppm	ASTM D5185(m)	>25	▲ **831**	▲ 406	▲ 436
Acid Number (AN)	mg KOH/g	ASTM D974*		▲ **1.73**	▲ 1.64	1.55
Yellow Metal	scalar	Visual*	NONE	▲ **MDHVY**	NONE	NONE
PrtFilter					*no image*	*no image*

Customer Id: MACPEM
Sample No.: WC0857969
Lab Number: 02630009
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	An inspection for the source(s) of wear may be warranted at this time.
Monitor	---	---	?	Wear particles and/or ppm levels are abnormally high indicating the need to review OEM limits with attention to components that may generate this type of wear. Include all test results and maintenance activities that have been performed since the abnormal condition was first detected in this review.
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).
Alert	---	---	?	Wear particles and/or ppm levels are abnormally high indicating the need to review OEM limits with attention to components that may generate this type of wear. Include all test results and maintenance activities that have been performed since the abnormal condition was first detected in this review.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.

HISTORICAL DIAGNOSIS

WEAR

14 Sep 2023 Diag: Bill Quesnel

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. You have indicated that the oil has been changed to ESSO CYLESSTIC TK 680, however, it appears that this is a sample of the previous fluid SHELL OMALA 320. Please confirm on your next oil sample that the oil has indeed been changed to ESSO CYLESSTIC TK 680.Copper and tin ppm levels are severe. Nickel and lead ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The AN level is above the recommended limit. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

WEAR

15 Jun 2023 Diag: Kevin Marson

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Copper and tin ppm levels are severe. Nickel and lead ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

WEAR

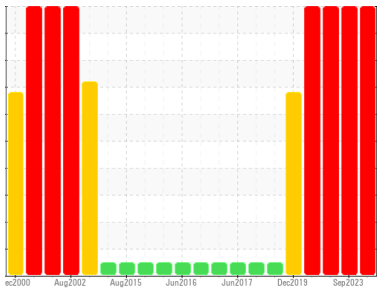
11 Jan 2023 Diag: Kevin Marson

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Copper and tin ppm levels are severe. Nickel ppm levels are abnormal. Lead ppm levels are noted. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



VISUAL METAL

Area
11
Machine Id
11-0040-010-030 SANDER#2 GEARBOX#3
Component
11 Gearbox
Fluid
ESSO CYLESSTIC TK 680 (1 LTR)

DIAGNOSIS

▲ Recommendation

We advise that you check for visible metal particles in the oil. Wear particles and/or ppm levels are abnormally high indicating the need to review OEM limits with attention to components that may generate this type of wear. Include all test results and maintenance activities that have been performed since the abnormal condition was first detected in this review. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. An inspection for the source(s) of wear may be warranted at this time. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).

▲ Wear

Copper and iron, nickel and tin ppm levels are severe. PQ levels are severe. Aluminum and lead ppm levels are abnormal. High concentration of visible metal present. Gear wear is indicated. Thrust washer and/or bearing/bushing wear is indicated. The very high ferrous density (PQ) index indicates that severe wear is occurring.

Contamination

There is no indication of any contamination in the oil.

▲ Fluid Condition

The AN level is above the recommended limit. The oil viscosity is higher than normal. The oil viscosity is higher than typical. Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0857969**	WC0820660	WC0820641
Sample Date		Client Info		**13 Mar 2024**	14 Sep 2023	15 Jun 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		▲ **370**	3	3
Iron	ppm	ASTM D5185(m)	>200	▲ **446**	65	53
Chromium	ppm	ASTM D5185(m)	>15	**4**	<1	<1
Nickel	ppm	ASTM D5185(m)	>15	▲ **81**	▲ 41	▲ 45
Titanium	ppm	ASTM D5185(m)		**<1**	0	0
Silver	ppm	ASTM D5185(m)		**2**	1	1
Aluminum	ppm	ASTM D5185(m)	>25	▲ **20**	6	3
Lead	ppm	ASTM D5185(m)	>100	▲ **196**	▲ 101	▲ 108
Copper	ppm	ASTM D5185(m)	>200	▲ **5476**	▲ 2768	▲ 3118
Tin	ppm	ASTM D5185(m)	>25	▲ **831**	▲ 406	▲ 436
Antimony	ppm	ASTM D5185(m)	>5	**1**	<1	1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

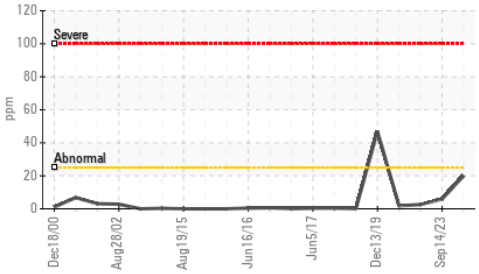
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**3**	2	2
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**4**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**3**	1	<1
Calcium	ppm	ASTM D5185(m)		**16**	6	3
Phosphorus	ppm	ASTM D5185(m)		● **328**	● 263	283
Zinc	ppm	ASTM D5185(m)		● **29**	12	13
Sulfur	ppm	ASTM D5185(m)		● **4355**	● 6870	7657
Lithium	ppm	ASTM D5185(m)		**2**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	**48**	18	9
Sodium	ppm	ASTM D5185(m)		**12**	4	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1

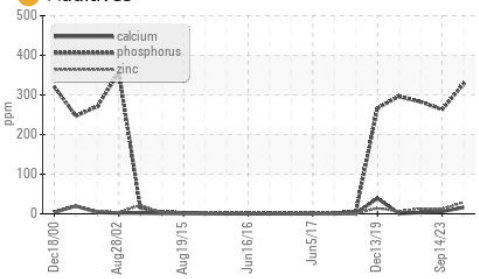
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		▲ **1.73**	▲ 1.64	1.55

OIL ANALYSIS REPORT

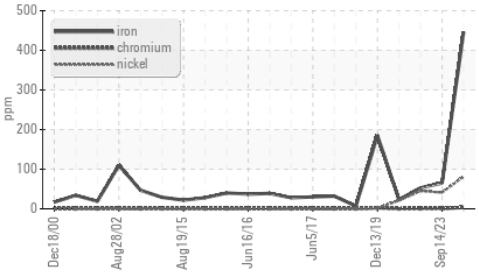
Aluminum (ppm)



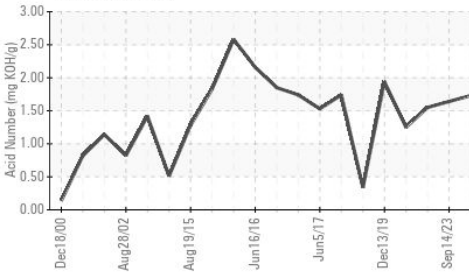
Additives



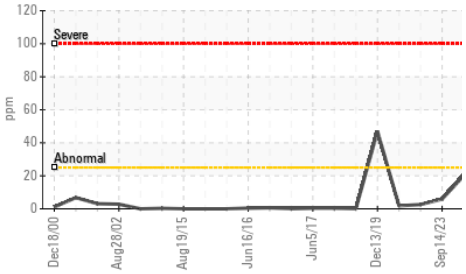
Ferrous Alloys



Acid Number

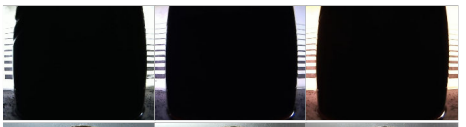
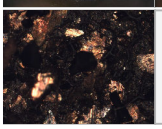


Aluminum (ppm)



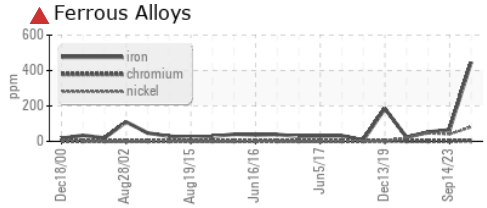
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	▲ **MDHVY**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Debris	scalar	Visual*	NONE	**VLITE**	NONE	LIGHT
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
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	627	**821**	▲ 361	329

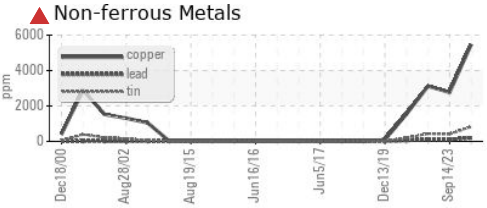
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter				*no image*	*no image*

GRAPHS

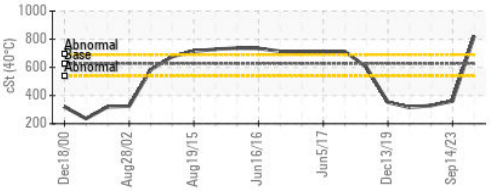
Ferrous Alloys



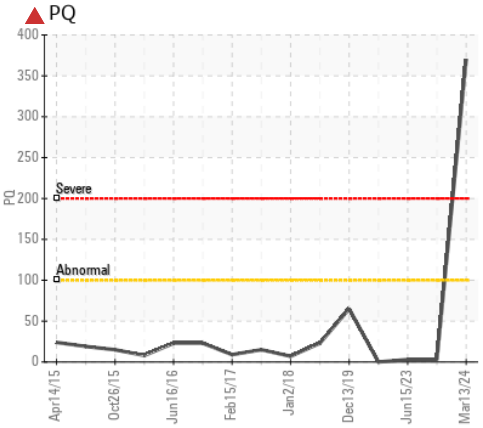
Non-ferrous Metals



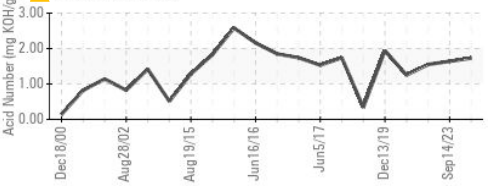
Viscosity @ 40°C



PQ



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0857969 **Received** : 18 Apr 2024
Lab Number : 02630009 **Tested** : 19 Apr 2024
Unique Number : 5763141 **Diagnosed** : 19 Apr 2024 - Kevin Marson
Test Package : IND 2 (Additional Tests: BottomAnalysis, FILTERPATCH, TAN Man)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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T: (613)732-3939
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