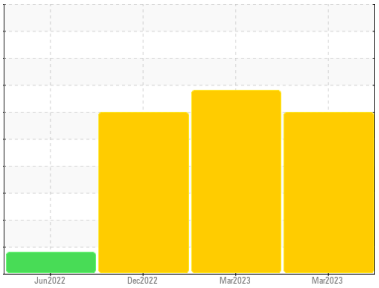
PROBLEM SUMMARY

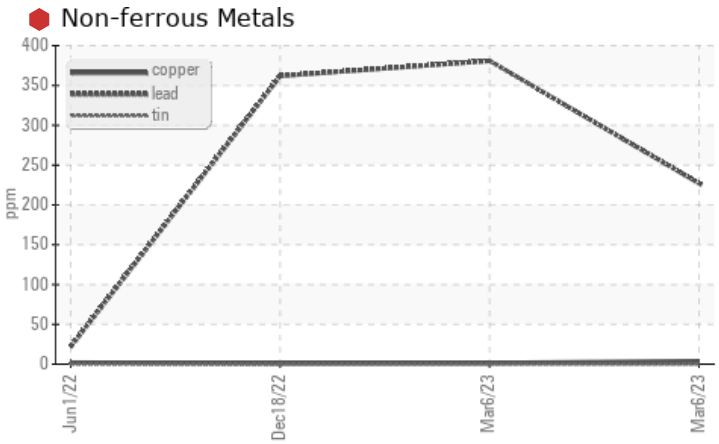
Sample Rating Trend



WEAR

Area
Industrial Mechanical/Conveyors
Machine Id
17-UGCNVY-CV-6680-3
Component
Drive End Conveyor Gearbox
Fluid
SHELL OMALA S2 G 220 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Lead	ppm	ASTM D5185(m)	>15	**381**	227	362

Customer Id: INCCRE
Sample No.: WC0540536
Lab Number: 02543946
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	MISSED	Jun 14 2023	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	MISSED	Jun 14 2023	?	We recommend an early resample to monitor this condition.
Information Required	MISSED	Jun 14 2023	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS

06 Mar 2023 Diag: Kevin Marson

WEAR

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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Lead ppm levels are severe. Iron ppm levels are abnormal. 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

18 Dec 2022 Diag: Kevin Marson

WEAR

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.Lead ppm levels are severe. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

01 Jun 2022 Diag: Kevin Marson

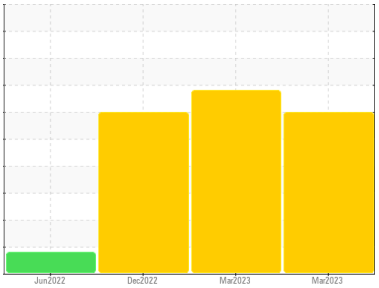
WEAR

Resample at the next service interval to monitor.Lead ppm levels are noted. All other component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
Industrial Mechanical/Conveyors
Machine Id
17-UGCNVY-CV-6680-3
Component
Drive End Conveyor Gearbox
Fluid
SHELL OMALA S2 G 220 (--- GAL)

DIAGNOSIS

Recommendation
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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear
Lead ppm levels are severe.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The AN level is acceptable for this fluid. 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		**WC0540536**	WC0540535	WC0532618
Sample Date		Client Info		**06 Mar 2023**	06 Mar 2023	18 Dec 2022
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	Not Changd
Sample Status				**SEVERE**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**29**	52	---
Iron	ppm	ASTM D5185(m)	>100	**67**	▲ 115	58
Chromium	ppm	ASTM D5185(m)		**<1**	1	<1
Nickel	ppm	ASTM D5185(m)		**2**	5	1
Titanium	ppm	ASTM D5185(m)		**<1**	<1	<1
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)		**3**	6	2
Lead	ppm	ASTM D5185(m)	>15	**381**	227	362
Copper	ppm	ASTM D5185(m)	>35	**2**	4	1
Tin	ppm	ASTM D5185(m)		**0**	0	0
Antimony	ppm	ASTM D5185(m)		**<1**	<1	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

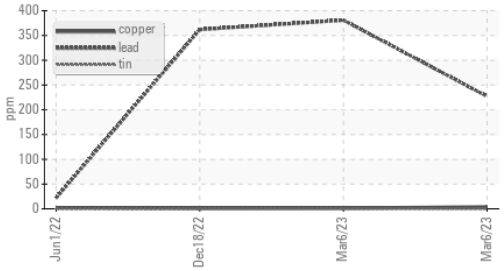
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	4.4	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0.0	**<1**	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	1	<1
Magnesium	ppm	ASTM D5185(m)	0	**2**	4	2
Calcium	ppm	ASTM D5185(m)	0	**9**	5	16
Phosphorus	ppm	ASTM D5185(m)	215	**323**	316	341
Zinc	ppm	ASTM D5185(m)	0	**4**	4	5
Sulfur	ppm	ASTM D5185(m)	7039	**7495**	7629	7675
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	**16**	22	13
Sodium	ppm	ASTM D5185(m)		**2**	3	2
Potassium	ppm	ASTM D5185(m)	>20	**1**	2	<1

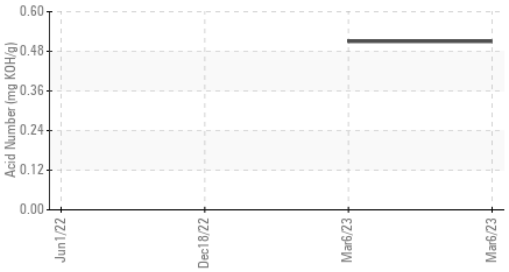
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.51**	0.51	---

OIL ANALYSIS REPORT

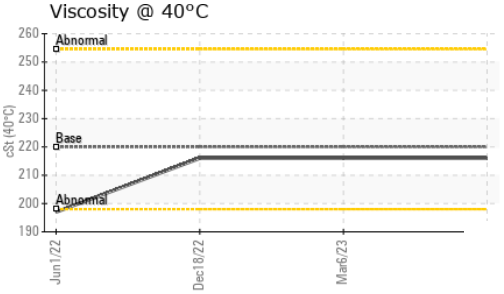
Non-ferrous Metals



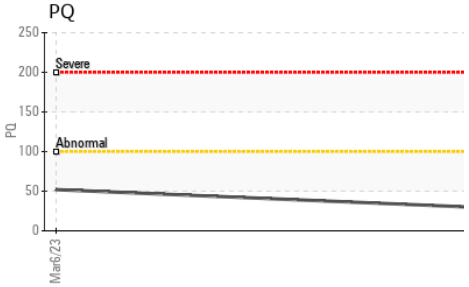
Acid Number



Viscosity @ 40°C

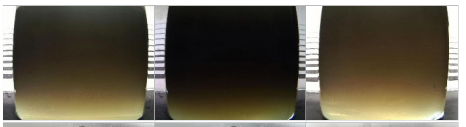


PQ



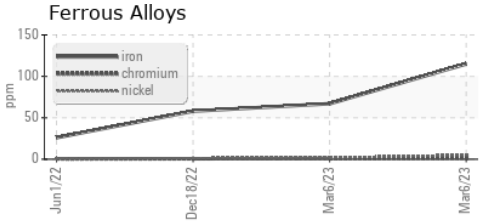
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	220	**216**	216	216

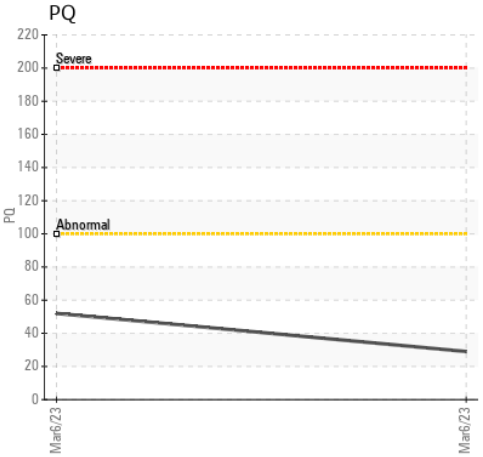
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

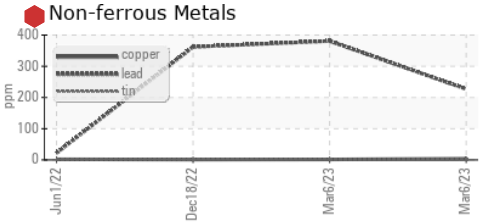
Ferrous Alloys



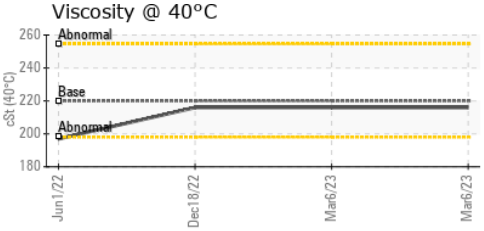
PQ



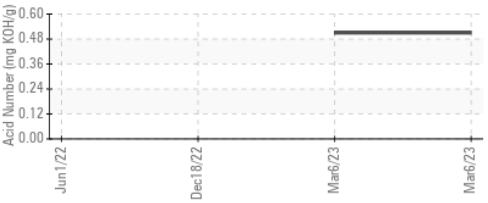
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: WC0540536	**Received**	: 08 Mar 2023
Lab Number	: 02543946	**Diagnosed**	: 10 Mar 2023
Unique Number	: 5540951	**Diagnostician**	: Kevin Marson
Test Package	: IND 2 (Additional Tests: 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.

Vale - Creighton Mine
CREIGHTON MINE MNTCE. (PLANT 17)
COPPER CLIFF, ON
CA P0M 1N0
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T: (705)682-7009
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