IND II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

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

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. Iron ppm levels are abnormal.

CONTAMINATION

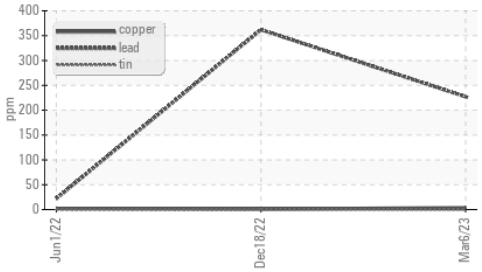
There is no indication of any contamination in the oil.

FLUID CONDITION

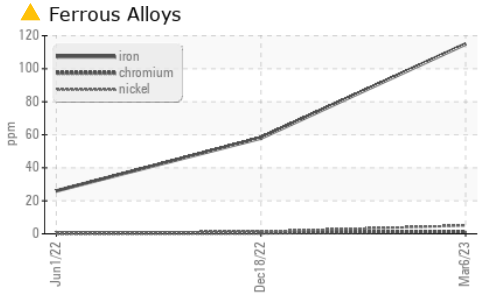
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0540535	WC0532618	WC0413453
Sample Date		Client Info		06 Mar 2023	18 Dec 2022	01 Jun 2022
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	N/A
Filter Changed		Client Info		N/A	Not Changd	N/A
Sample Status				SEVERE	SEVERE	ATTENTION
PQ		ASTM D8184*		52	---	---
Iron	ppm	ASTM D5185(m)	>100	▲ 115	58	26
Chromium	ppm	ASTM D5185(m)		1	<1	<1
Nickel	ppm	ASTM D5185(m)		5	1	<1
Titanium	ppm	ASTM D5185(m)		<1	<1	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)		6	2	2
Lead	ppm	ASTM D5185(m)	>15	▲ 227	▲ 362	● 22
Copper	ppm	ASTM D5185(m)	>35	4	1	2
Tin	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>50	22	13	19
Potassium	ppm	ASTM D5185(m)	>20	2	<1	1
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
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 D5185(m)		3	2	<1
Boron	ppm	ASTM D5185(m)	4.4	<1	<1	<1
Barium	ppm	ASTM D5185(m)	0.0	0	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		1	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	4	2	1
Calcium	ppm	ASTM D5185(m)	0	5	16	3
Phosphorus	ppm	ASTM D5185(m)	215	316	341	332
Zinc	ppm	ASTM D5185(m)	0	4	5	5
Sulfur	ppm	ASTM D5185(m)	7039	7629	7675	3457
Acid Number (AN)	mg KOH/g	ASTM D974*		0.51	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	220	216	216	197

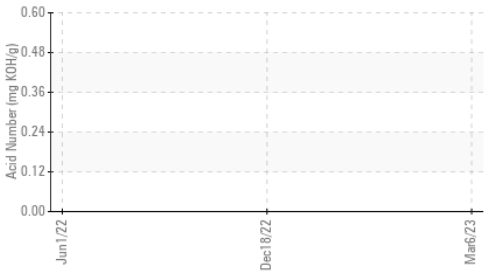
Non-ferrous Metals



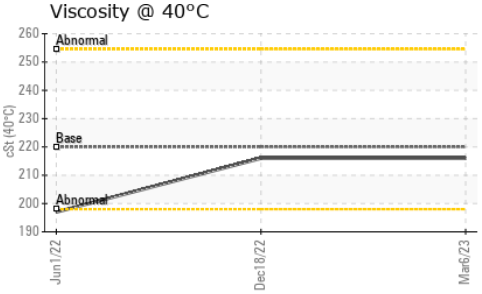
Ferrous Alloys



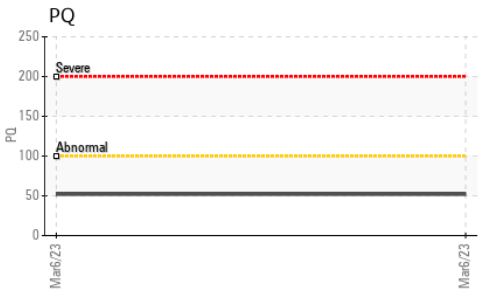
Acid Number



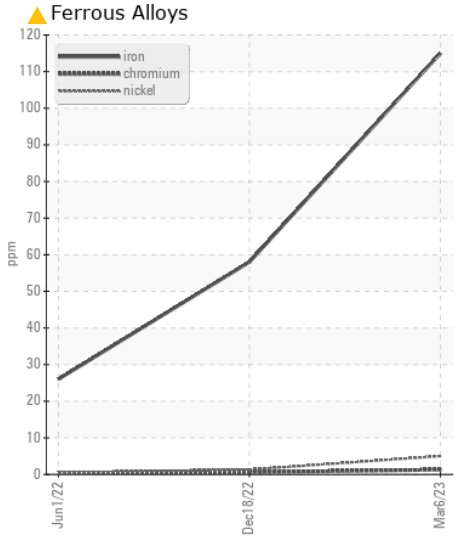
Viscosity @ 40°C



PQ



Ferrous Alloys



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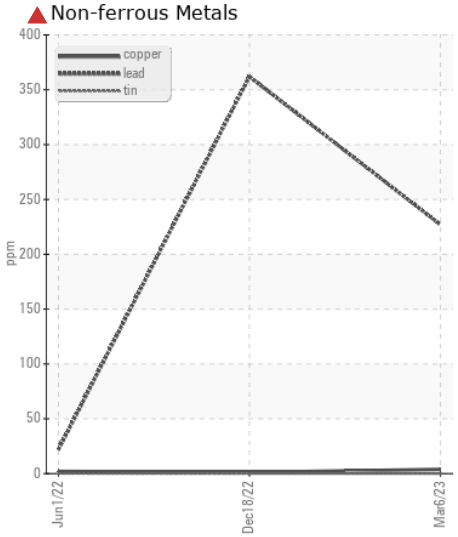
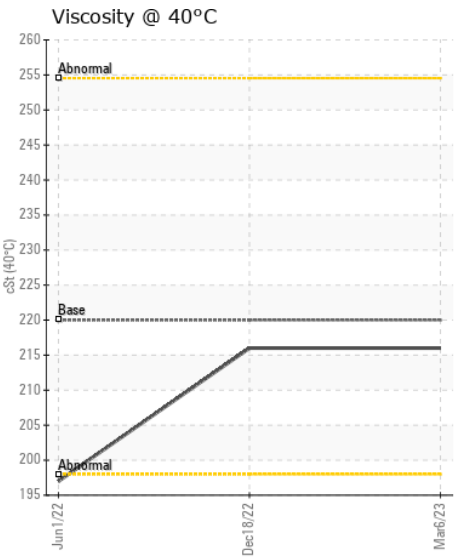
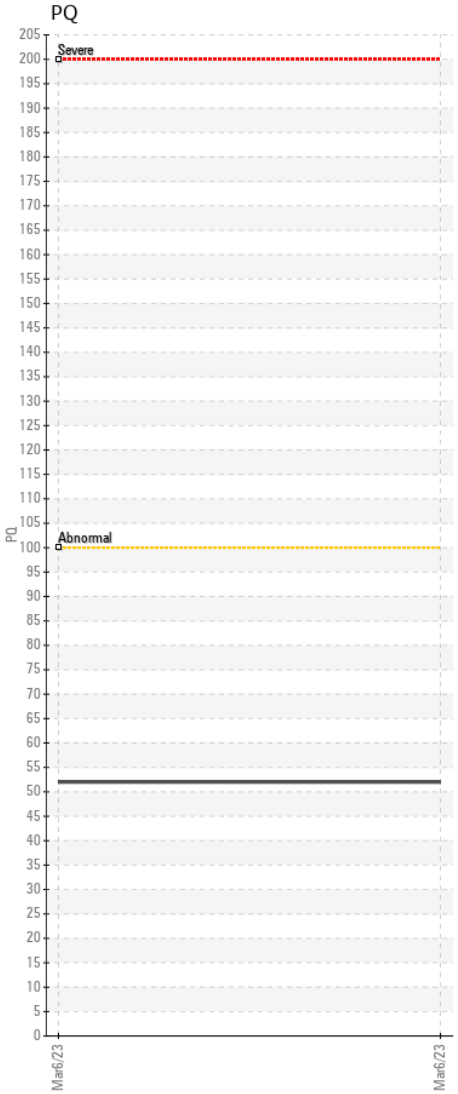


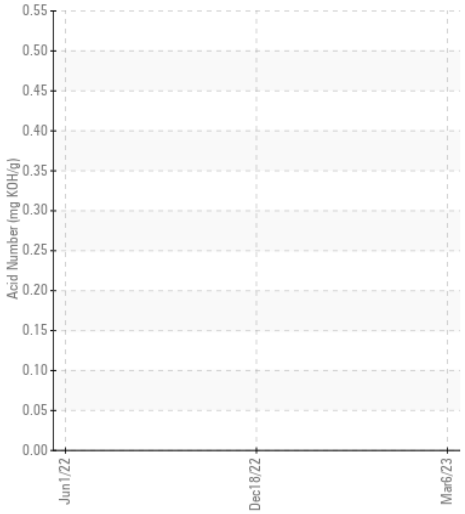
Viscosity @ 40°C



PQ



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0540535
Lab Number : 02543945
Unique Number : 5540950
Test Package : IND 2 (Additional Tests: TAN Man)

Received : 08 Mar 2023
Tested : 10 Mar 2023
Diagnosed : 10 Mar 2023 - Kevin Marson

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
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