IND II

FLUID FORENSICS
ADVANCED OIL ANALYSIS SERVICES

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
BT-FOR-A3 (S/N TANK FT3 AGITATOR)
Component
Gearbox
Fluid
SHELL OMALA S2 GX 220 (--- GAL)

RECOMMENDATION

Filter oil if possible using B6=75 filter media or better. Investigate sample procedures and possible sources of contamination. If oil has been exposed due to broken seals or open breathers, consider changing oil. Resample at next normal interval.

WEAR

Iron wear particles are elevated from previous samples. This could indicate accelerated wear

CONTAMINATION

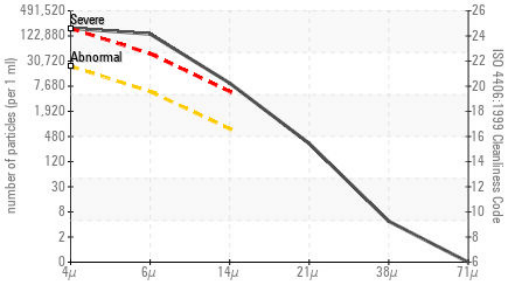
Particle contamination is elevated. Filtration can help extend machine life.

FLUID CONDITION

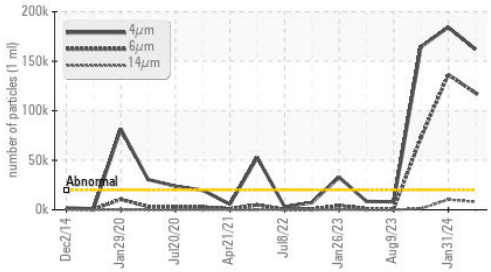
Fluid health is acceptable for continued use provided that contamination is brought under control.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PLS0000870	PLS0000809	PLS0000780
Sample Date		Client Info		17 Apr 2024	31 Jan 2024	25 Oct 2023
Machine Age	mths	Client Info		3	3	0
Oil Age	mths	Client Info		0	0	1
Filter Age	mths	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	SEVERE
PQ		ASTM D8184		73	▲ 153	36
Iron	ppm	ASTM D5185m	>200	101	▲ 114	59
Chromium	ppm	ASTM D5185m	>15	0	0	0
Nickel	ppm	ASTM D5185m	>15	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	0	0	0
Lead	ppm	ASTM D5185m	>100	0	0	0
Copper	ppm	ASTM D5185m	>200	<1	0	0
Tin	ppm	ASTM D5185m	>25	<1	0	0
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	>50	1	2	<1
Potassium	ppm	ASTM D5185m	>20	1	0	0
Water		WC Method	>0.2	NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624		3.1	3.0	3.0
Sulfation	Abs/.1mm	*ASTM D7415		12.4	12.2	12.4
Particles >4µm		ASTM D7647	>20000	▲ 162090	▲ 184263	▲ 164595
Particles >6µm		ASTM D7647	>5000	▲ 117851	▲ 136492	▲ 72877
Particles >14µm		ASTM D7647	>640	▲ 7921	▲ 10385	● 1139
Particles >21µm		ASTM D7647	>160	▲ 287	▲ 381	60
Particles >38µm		ASTM D7647	>40	4	2	0
Particles >71µm		ASTM D7647	>10	0	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 25/24/20	▲ 25/24/21	▲ 25/23/17
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		2	0	2
Boron	ppm	ASTM D5185m	6.2	0	0	<1
Barium	ppm	ASTM D5185m	0.0	0	<1	0
Molybdenum	ppm	ASTM D5185m	0	0	0	0
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m	0	4	2	0
Calcium	ppm	ASTM D5185m	0.0	4	5	0
Phosphorus	ppm	ASTM D5185m	290	306	302	193
Zinc	ppm	ASTM D5185m	3.8	2	15	0
Sulfur	ppm	ASTM D5185m	8167	12562	9699	8473
Oxidation	Abs/.1mm	*ASTM D7414		2.9	2.9	3.3
Acid Number (AN)	mg KOH/g	ASTM D8045		0.57	0.60	0.58
Visc @ 40°C	cSt	ASTM D445	220	214	213	211

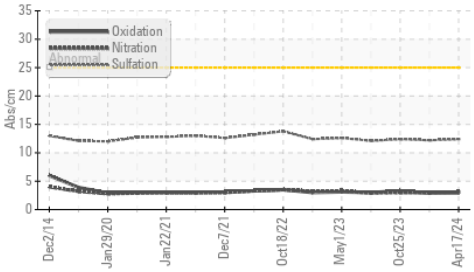
Particle Count



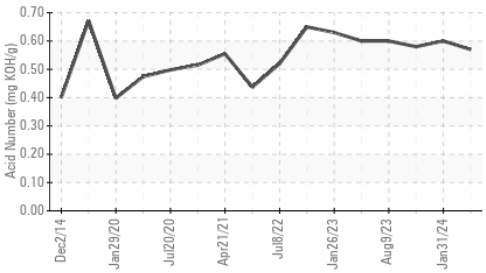
Particle Trend



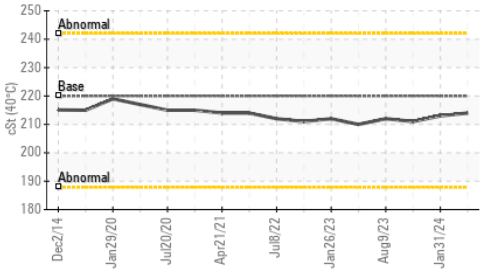
FT-IR (Direct Trend)



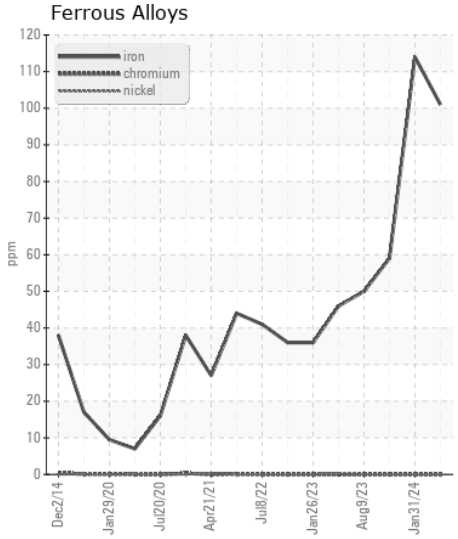
Acid Number



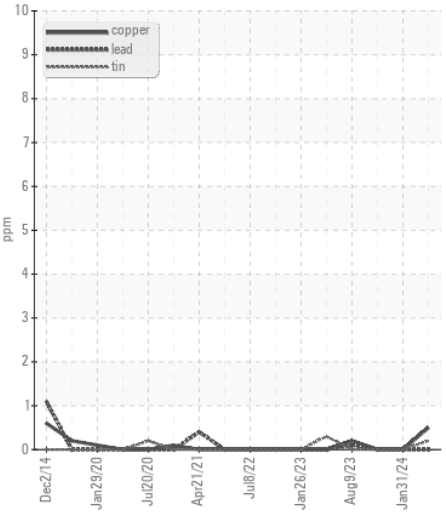
Viscosity @ 40°C



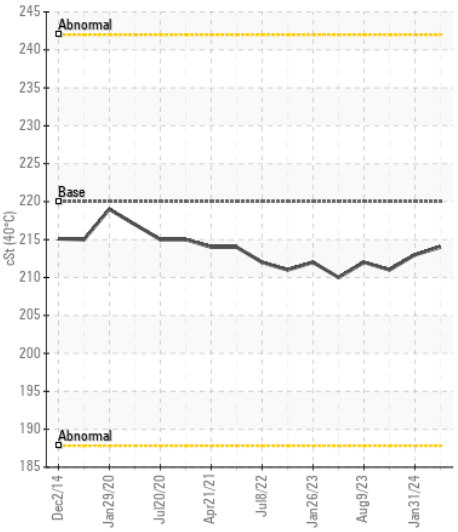
Ferrous Alloys



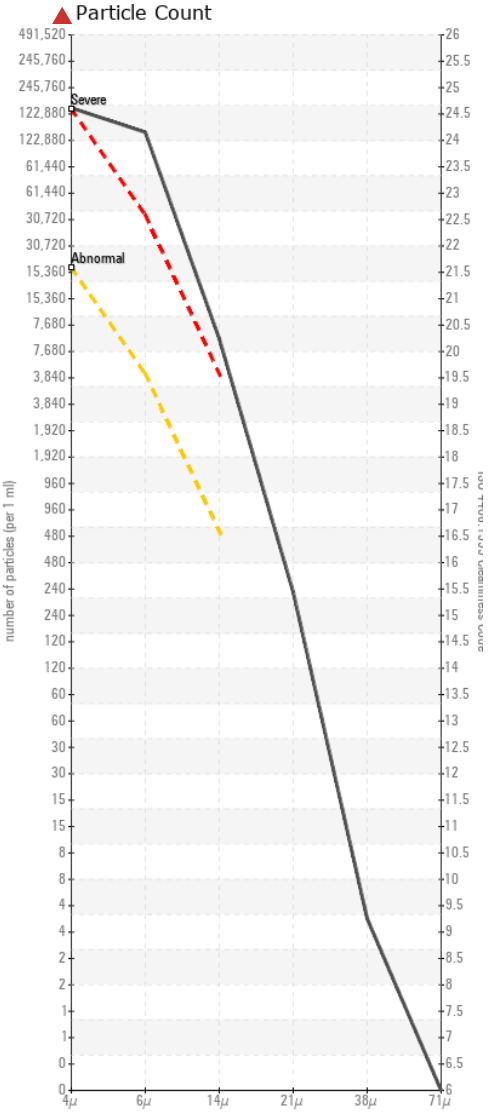
Non-ferrous Metals



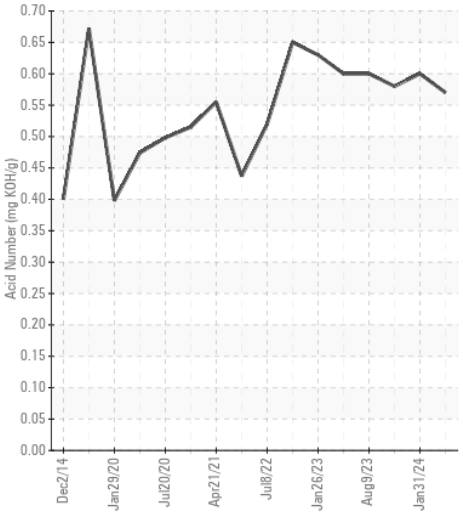
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000870
Lab Number : 06154202
Unique Number : 10989625
Test Package : IND 2 (Additional Tests: FT-IR, PQ, PrtCount)

Received : 19 Apr 2024
Tested : 06 May 2024
Diagnosed : 07 May 2024 - Mike Johnson

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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