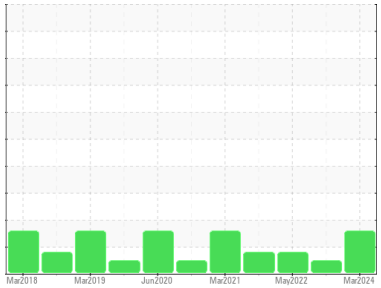
STAUFF FILTRATION TECHNOLOGY

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
FLIGHT SIMULATOR 747-2
Component
Hydraulic System
Fluid
SHELL TELLUS 46 (400 GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**ST44143**	ST40569	ST40978
Sample Date		Client Info		**04 Mar 2024**	10 Mar 2023	15 May 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	N/A
Sample Status				**ABNORMAL**	NORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**0**	<1	<1
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**0**	0	<1
Lead	ppm	ASTM D5185m	>20	**0**	<1	2
Copper	ppm	ASTM D5185m	>20	**4**	5	5
Tin	ppm	ASTM D5185m	>20	**0**	0	0
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0.0	**0**	0	2
Barium	ppm	ASTM D5185m	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	0	**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m	11	**10**	12	0
Calcium	ppm	ASTM D5185m	35	**15**	27	31
Phosphorus	ppm	ASTM D5185m	266	**262**	304	291
Zinc	ppm	ASTM D5185m	276	**336**	366	364
Sulfur	ppm	ASTM D5185m	1847	**967**	1132	1143

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**2**	<1	<1
Sodium	ppm	ASTM D5185m		**1**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**0**	0	0
Water	%	ASTM D6304	>0.05	**0.001**	0.004	0.005
ppm Water	ppm	ASTM D6304	>500	**5**	44.7	55.7

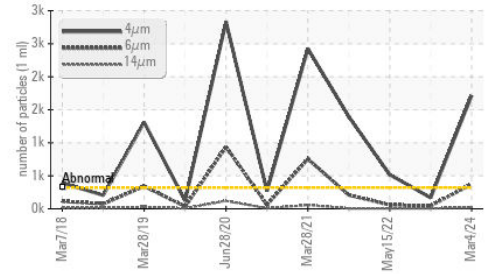
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>320	▲ **1713**	168	● 516
Particles >6µm		ASTM D7647	>80	▲ **375**	44	58
Particles >14µm		ASTM D7647	>10	● **16**	6	6
Particles >21µm		ASTM D7647	>3	**4**	3	2
Particles >38µm		ASTM D7647	>3	**0**	0	1
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>15/13/10	▲ **18/16/11**	15/13/10	● 16/13/10

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.36	**0.35**	0.36	0.33

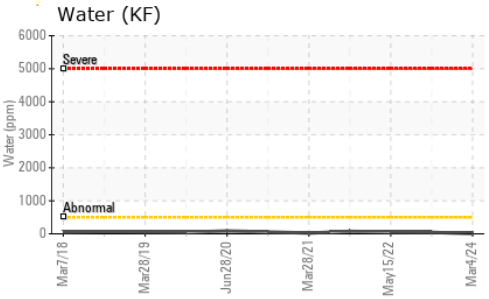
STAUFF FILTRATION TECHNOLOGY

OIL ANALYSIS REPORT

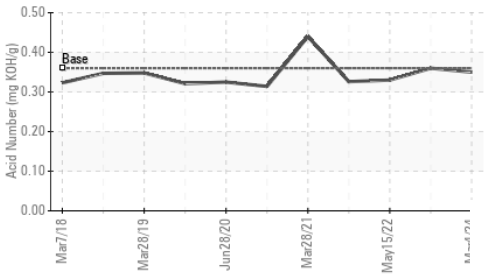
Particle Trend



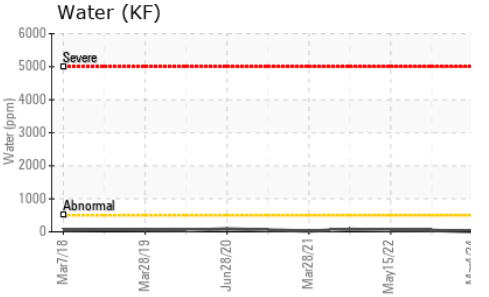
Water (KF)



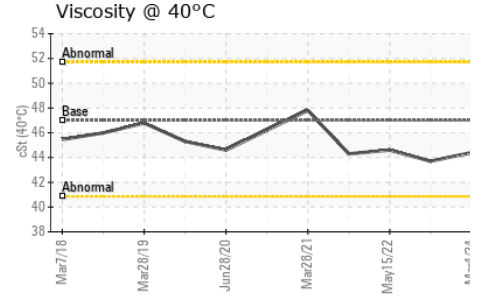
Acid Number



Water (KF)

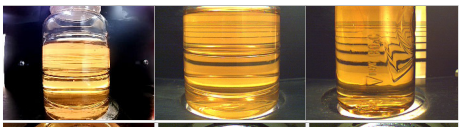
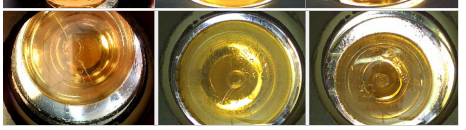


Viscosity @ 40°C



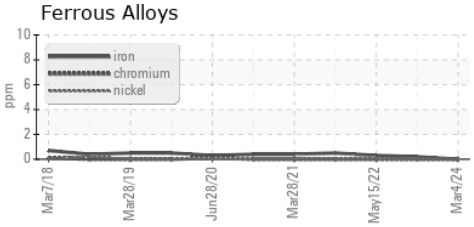
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46.99	**44.4**	43.7	44.6

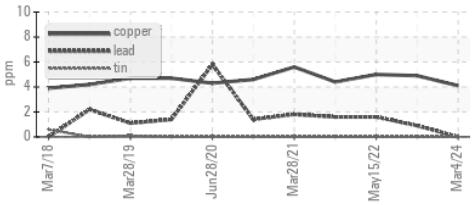
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

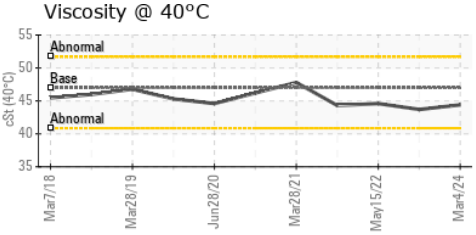
Ferrous Alloys



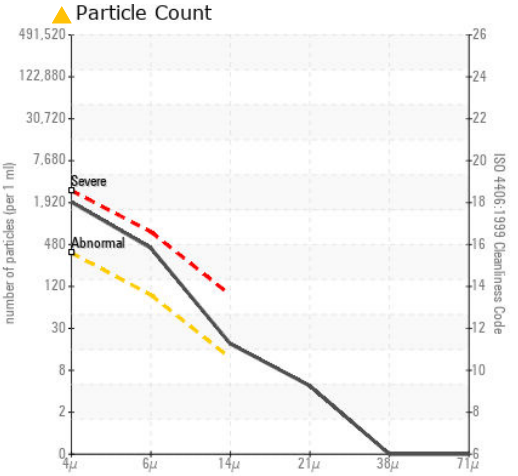
Non-ferrous Metals



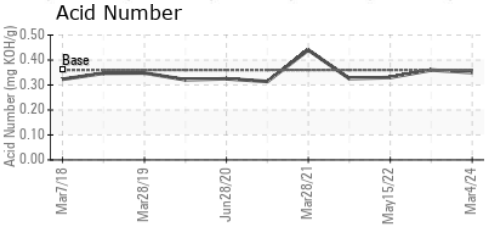
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ST44143 **Received** : 27 Mar 2024
Lab Number : 06130665 **Tested** : 28 Mar 2024
Unique Number : 10950130 **Diagnosed** : 28 Mar 2024 - Wes Davis
Test Package : IND 2 (Additional Tests: KF)

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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